

# NXT ENERGY SOLUTIONS INC.

## FORM 20-F

(Annual and Transition Report (foreign private issuer))

Filed 04/30/25 for the Period Ending 12/31/24

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Sector	Energy
Fiscal Year	12/31

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

**FORM 20-F**

(Mark One)

- ☐ Registration Statement Pursuant To Section 12(b) or (g) of the Securities Exchange Act of 1934  
OR
- ☒ Annual Report Pursuant To Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2024.  
OR
- ☐ Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934  
For the transition period from \_\_ to \_\_  
OR
- ☐ Shell Company Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934  
Date of event requiring this shell company report:

Commission file number 000-24027

**NXT Energy Solutions Inc.**

(Exact Name of Registrant as Specified in its Charter)

Alberta, Canada

(Jurisdiction of incorporation or organization)

Suite 302, 3320 - 17th Avenue SW  
Calgary, Alberta, Canada, T3E 0B4  
(Address of principal executive offices)

Eugene Woychyshyn

Phone: 403-206-0805

Facsimile: 403-264-6442

Suite 302, 3320 - 17th Avenue SW

Calgary, Alberta, Canada, T3E 0B4

(Name, Telephone, E-mail and/or Facsimile number and address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act: None

Securities registered or to be registered pursuant to Section 12(g) of the Act:

Common Shares

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

78,495,184 common shares outstanding as of December 31, 2024 (79,482,768 common shares outstanding as of April 29, 2025).

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☐ No ☒

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Yes ☐ No ☒

Note-Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of “accelerated filer”, “large accelerated filer”, and “emerging growth company” in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Emerging growth Company	<input type="checkbox"/>

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards† provided pursuant to Section 13(a) of the Exchange Act. ☐

† The term “new or revised financial accounting standard” refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant’s executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing.

U.S. GAAP	<input checked="" type="checkbox"/>	International Financial Reporting Standards as issued by the International Accounting Standards Board	<input type="checkbox"/>	Other	<input type="checkbox"/>
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If “Other” has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act)

Yes ☐ No ☒

<b>Auditor Name:</b> MNP LLP	<b>Firm ID#</b> 1930	<b>Auditor Location:</b> Calgary Alberta, Canada
<b>Auditor Name</b> KPMG LLP	<b>Firm ID#</b> 85	<b>Auditor Location:</b> Calgary Alberta, Canada

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## FORWARD-LOOKING STATEMENTS

NXT Energy Solutions Inc. is a Calgary-based technology company whose proprietary airborne SFD<sup>®</sup> survey system, applied in numerous basins around the world, uses the principles of quantum mechanics to infer stress anomalies of exploration interest. The method can be used both onshore and offshore to remotely identify areas conducive to fluid entrapment in order to recommend areas with commercial hydrocarbon and/or geothermal potential. The SFD<sup>®</sup> survey system enables our clients to focus their exploration decisions concerning land commitments, data acquisition expenditures and prospect prioritization on areas with the greatest potential. SFD<sup>®</sup> is environmentally friendly and unaffected by ground security issues or difficult terrain and is the registered trademark of NXT Energy Solutions Inc. NXT Energy Solutions Inc. provides its clients with an effective and reliable method to reduce time, costs, and risks related to exploration.

Except for any historical information contained herein, the matters discussed in this Annual Report on Form 20-F contain certain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995 with respect to our financial condition, results of operations and business. These statements relate to analyses and other information which are based on forecasts of future results and estimates of amounts not yet determinable. This information also relates to our future prospects, developments and business strategies. These forward-looking statements are identified by their use of terms and phrases such as “anticipate”, “believe”, “can”, “continue”, “could”, “would”, “should”, “estimate”, “expect”, “intend”, “seek”, “may”, “plan”, “remain”, “shall”, “will”, “target”, “foresee” and similar terms and phrases, including references to assumptions. These forward-looking statements involve risks and uncertainties, including current trend information, projections for deliveries and other trend projections, that may cause our actual future activities and results of operations to be materially different from those suggested or described in this Annual Report on Form 20-F.

- Execution of the African SFD<sup>®</sup> Survey (as defined herein);
- Execution of the Southeast Asia SFD<sup>®</sup> Survey (as defined herein);
- Execution of the AL-Haj Enterprises Private Limited SFD<sup>®</sup> Survey (as defined herein);
- the Company’s ability to successfully work with Synergy and Ataraxia (each as defined herein) to develop future business in the African continent;
- the Company’s expectation that the Geothermal Right (as defined herein) will amortize on a straight-line basis over its estimated useful life of 20 years;
- that the SFD<sup>®</sup> technology may reduce the need for seismic in wide-area reconnaissance;
- receipt of funding under the NRC IRAP (as defined herein);
- expectations regarding maintenance performed on the Company’s leased aircraft;
- expectations regarding the future vesting, settlement and expiry of securities issued in connection with the Company’s share-based compensation plans;
- expectations regarding the amortization of the Company’s intellectual property (“IP”) assets;
- the Company’s ability to achieve the remaining milestone with respect to the consideration (as defined herein) owing to the estate of Mr. George Liszicasz, the future payment of such Consideration to the estate of Mr. George Liszicasz, and the satisfaction of the conditions thereto (including with respect to cash balances, receipt of funds, and the execution and completion of contracts);
- the Company’s ability to use alternative strategies to reduce the volatility of US dollar liabilities;
- the development, commercialization, and protection of the SFD<sup>®</sup> technology for geothermal resource exploration;
- the extent to which expanding the Company’s scope of business to include exploring for both hydrocarbon and geothermal resources is anticipated to result in an expansion of its scope of revenue sources;
- the Company’s pursuit of opportunities to secure new revenue contracts;
- expectations regarding competition within the industries in which the Company operates;
- the Company’s ability to continue operating as a going concern;
- the Company’s ability to continue making payments on its office lease, its aircraft lease and the effects of any default under either such lease;
- the Company’s ability to pay amounts owing under the Ataraxia Debentures the November Debentures, and the 2024 Debentures (each as defined herein) (together, the “Debentures”);
- expectations regarding the future conversion of the Debentures into common shares or preferred shares of the Company, as applicable;

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- the Company's ability to repay the amounts owing under the HASCAP Loan (as defined herein) over a nine-year period;
- the timing and value of payments owing under the Company's office lease;
- the Company's belief that its current cash position is not expected to be sufficient to meet obligations and planned operations for the year beyond the date that the audited consolidated financial statements have been issued;
- expectations regarding the Company's DCPs and ICFR (each as defined herein), including the Company's ability to further adjust such DCPs and ICFR to mitigate material weaknesses going forward;
- estimates related to the Company's future financial position and liquidity, including certain contractual obligations; and
- the Company's general business strategies and objectives.

Such forward-looking information is based on a number of assumptions which may prove to be incorrect. Assumptions have been made with respect to the following matters, in addition to any other assumptions identified in this document:

- our ability to develop and market our SFD<sup>®</sup> technology and services to current and new customers;
- our belief that our SFD<sup>®</sup> technology is technically superior to other airborne survey systems;
- our ability to source personnel and equipment in a timely manner and at an acceptable cost;
- our ability to obtain all permits and approvals required;
- our ability to obtain financing on acceptable terms;
- our ability to obtain insurance to mitigate the risk of default on client billings;
- our assessment of the office lease being reasonable;
- our assessment of potential indicators of impairment and recognition of SFD<sup>®</sup> related revenue;
- the estimated minimum annual commitments for the Company's lease components;
- foreign currency exchange and interest rates;
- general business, economic, and market conditions (including global commodity prices and inflation); and
- approval of the next phase of the NRC IRAP project, as defined herein.

Although NXT believes that the expectations reflected in such forward-looking information are reasonable, undue reliance should not be placed on them as NXT can give no assurance that such expectations will prove to be correct. Forward-looking information is based on expectations, estimates, and projections that involve a number of risks and uncertainties, which could cause actual results to differ materially from those anticipated by NXT and are described in the forward-looking information. Material risks and uncertainties include, but are not limited to:

- the ability of management to execute its business plan, including their ability to secure additional new revenue contracts;
- health, safety, and the environmental factors;
- our ability to develop and commercialize the geothermal technology;
- our ability to service existing debt;
- our ability to protect and maintain our IP and rights to our SFD<sup>®</sup> technology;
- our reliance on a limited number of key personnel;
- our reliance on a single aircraft;
- our reliance on a limited number of clients;
- counterparty credit risk;
- foreign currency and interest rate fluctuations;
- trade and tariffs risks;
- the likelihood that the Company's DCPs and ICFR (each as defined herein) will prevent or detect material misstatements in our audited consolidated financial statements;
- changes in, or in the interpretation of, laws, regulations, or policies; and
- general business, economic, and market conditions (including global commodity prices).

If one or more of these risks or uncertainties materialize, or if underlying assumptions prove incorrect, our actual results may vary materially from those expected, estimated or projected. Given these uncertainties, users of the information included in this Annual Report on Form 20-F, including investors and prospective investors, are cautioned not to place undue reliance on such forward-looking statements. We do not intend to update the forward-looking statements included in this Annual Report on Form 20-F.

In this Annual Report on Form 20-F, except as specified otherwise or unless the context requires otherwise, "we", "our", "us", the "Company", and "NXT" refer to NXT Energy Solutions Inc. and its subsidiaries. All references to "fiscal" in connection with a year shall mean the year ended December 31.

All financial information contained herein is expressed in Canadian dollars ("CDN\$") unless otherwise stated.

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## PART I

### ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

This Form 20-F is being filed as an annual report under the United States *Securities Exchange Act of 1934*, as amended, (the "**U.S. Exchange Act**") and, as such, there is no requirement to provide any information under this item.

### ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

This Form 20-F is being filed as an annual report under the U.S. Exchange Act and, as such, there is no requirement to provide any information under this item.

### ITEM 3. KEY INFORMATION

#### A. [Reserved].

#### B. Capitalization and indebtedness.

This Form 20-F is being filed as an annual report under the U.S. Exchange Act and, as such, there is no requirement to provide any information under this item.

#### C. Reasons for the offer and use of proceeds.

This Form 20-F is being filed as an annual report under the U.S. Exchange Act and, as such, there is no requirement to provide any information under this item.

#### D. Risk factors.

Investing in our common shares involves a high degree of risk. In addition to the other information included in this document, you should carefully consider the risks described below before purchasing our common shares. If any of the following risks actually occur, our business, financial condition and results of operations could materially suffer. As a result, the trading price of our common shares could decline and you might lose all or part of your investment.

#### Our ability to continue operating.

NXT is still in the process of realizing widespread commercialization of its SFD<sup>®</sup> technology. The Company's ability to generate cash flow from operations will depend on its ability to service its existing clients and develop new clients for its SFD<sup>®</sup> services. Management recognizes that the commercialization phase can last for several years, and that it can have significant economic dependence on a small number of clients, which can have a material effect on the Company's operating results and financial position.

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The events described in the following paragraphs highlight that there continues to be material uncertainties that cast substantial doubt about NXT's ability to continue as a going concern within one year after the date that the consolidated financial statements have been issued. The Company's current cash position is not expected to be sufficient to meet the Company's obligations and planned operations for a year beyond the date that the consolidated financial statements have been issued.

During 2024 the Company completed an SFD<sup>®</sup> survey and has received deposits payments on three other SFD<sup>®</sup> surveys planned to be executed in 2025 (the "2025 SFD<sup>®</sup> Surveys"). As of the date of the financial statements, the Company has finished the acquisition phase of one of the 2025 SFD<sup>®</sup> Surveys and received milestone payments which has generated cash from operations for the Company. In addition, in 2023 and 2024, the Company completed private placements which resulted in raising an additional net proceeds of \$9,757,366.

The Company continues to develop its pipeline of opportunities to secure additional revenue contracts. The Company's longer-term success remains dependent upon its ability to convert these revenue opportunities into successful contracts, to continue to attract new client projects, expand its revenue base to a level sufficient to exceed fixed operating costs, and generate consistent positive cash flow from operations. The occurrence and timing of these events cannot be predicted with certainty.

Further financing options that may or may not be available to the Company include issuance of new equity, debentures or bank credit facilities. The need for any of these options will be dependent on the timing of securing additional SFD<sup>®</sup> related revenues and obtaining financing on terms that are acceptable to both the Company and the financier.

The consolidated financial statements do not reflect adjustments that would be necessary if the going concern basis was not appropriate. If the going concern basis was not appropriate for these consolidated financial statements, then adjustments would be necessary in the carrying value of the assets and liabilities, the reported revenues and expenses, and the balance sheet classifications used. These adjustments could be material.

If the Company were to default on its office lease, the current month rent plus the next three months become immediately due. If the Company were to default on the aircraft lease, the Company would be required to deliver the aircraft back to the Lessor (defined below).

**We rely on a limited number of key personnel who collectively possess the knowledge and skills to conduct SFD<sup>®</sup> surveys and interpret SFD<sup>®</sup> data as required to meet contract obligations.**

We rely on a limited number of key personnel who collectively possess the knowledge and skills to conduct SFD<sup>®</sup> surveys and interpret SFD<sup>®</sup> data as required to meet contract obligations. Additional or replacement personnel may not be found and trained quickly. The loss of any of these key persons or increased demand for our services from clients could impair our ability to meet contract obligations, thereby adversely impacting our reputation and our ability to earn future revenue from clients.

The Company's future success depends, to a significant extent, on the continued service of its key technical and management personnel and on our ability to continue to attract and retain qualified employees. The loss of the services of our employees or a failure to attract, retain and motivate qualified personnel could have a material adverse effect on our business, financial condition and results of operations. We do not have "key person" insurance on any of our personnel.

We depend on key staff members that are involved in the SFD<sup>®</sup> data interpretation process and to continue to enhance our technology. We are working to minimize dependency on key personnel. Currently, a total of four persons, two of which are highly experienced, are trained to interpret SFD<sup>®</sup> signals. A process of formal documentation of the ongoing research and development of the sensor technology, the acquisition/survey methodologies, and the processing and interpretation work flows is ongoing and will be part of the management systems.

Within the Province of Alberta, the skilled personnel that we require may periodically be in short supply and there is specialized training required that can take several months in order for a new employee to become effective. If we cannot hire these key personnel, we have inadequate time to train them or should we lose current personnel, then our ability to accept contracts or meet contract commitments may be adversely affected, thereby restricting our ability to earn revenue.

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### **Availability of Aircraft.**

In the event that NXT's aircraft is not available (due to damage, a need for extensive repairs, or other unforeseen events) to conduct survey projects, there is a risk that suitable alternative aircraft may not be available on a timely basis from other charter operators when needed. This inability to conduct survey operations could have a material adverse effect on the Company's business, financial condition and results of operations.

### **Debt Service**

NXT has financed a significant portion of its operations through debt. Amounts paid in respect of interest and principal on debt incurred by NXT may impair NXT's ability to satisfy its other obligations. All of NXT's debt is fixed rate. Lenders have been provided with security over substantially all of the assets of NXT. If NXT becomes unable to pay its debt service charges or otherwise commits an event of default such as bankruptcy, a lender may be able to foreclose on or sell the assets of NXT.

### **We rely on specialized equipment, including a limited number of SFD<sup>®</sup> sensors and this limitation may affect our ability to conduct business.**

NXT relies on specialized data acquisition equipment, including a limited number of SFD<sup>®</sup> sensor devices, to conduct our aerial SFD<sup>®</sup> survey operations. We would be at risk if these survey sensors were to become damaged, destroyed, worn out, stolen or in any way became unavailable for use in operations prior to us creating and testing additional sensors. Should the sensors become unavailable for any reason, our ability to conduct surveys could be delayed for several months as we built new sensors. During this period, we may become unable to satisfy contractual obligations, which may jeopardize future revenue opportunities and may potentially result in a client making claims against the Company for breach of contract. In addition, an inability to satisfy contractual obligations may have an adverse effect on our developing reputation within the oil and gas community. NXT mitigates this risk by researching new designs, constructing additional SFD<sup>®</sup> sensor devices and obtaining replacement cost insurance on each SFD<sup>®</sup> sensor.

### **Our financial position is affected by foreign currency fluctuations.**

The Company is exposed to foreign exchange risk in relation to its potential holding of significant US\$ balances in cash and cash equivalents, deposits, accounts payables, accrued liabilities, and lease obligations, and entering into United States dollar revenue contracts. The Company does not enter into hedging contracts to mitigate exposure to fluctuations in foreign exchange, but uses strategies to reduce the volatility of US\$ assets and liabilities, including converting excess US\$ to Canadian dollars. As at December 31, 2024, the Company held net United States dollar liabilities totaling approximately US\$7,130,144. Accordingly, a hypothetical 10% change in the value of one United States dollar expressed in Canadian dollars as at December 31, 2024 would have had an approximately \$1,025,671 effect on the unrealized foreign exchange gain or loss for the year.

Changes in currency exchange rates could have an adverse effect on the Company's business, financial condition and results of operations.

### **Our net income or loss is impacted by interest rate fluctuations.**

We periodically invest available cash in short term investments that generate interest income that will be affected by any change in interest rates. The Company's long-term debt interest is fixed at 4% until 2031 and the November Debentures, 2024 Debentures, and the Ataraxia Debentures, each defined herein, carry a fixed interest rate of 10% until their maturity date which, in the case of each such convertible debenture, is two years after issuance. Any refinancing of the convertible debentures, or new debt financing could result in a significantly different interest rate.

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**Volatility in oil and natural gas commodity prices may affect demand for our services.**

NXT's customer base is in the oil and natural gas exploration industry, which is exposed to risks of volatility in oil and natural gas commodity prices. As such, demand for our services and prospective revenues may become adversely impacted by fluctuations in oil and natural gas prices. The impact of price changes on our ability to enter into SFD<sup>®</sup> survey contracts cannot be readily determined at this time. However, in general, if commodity prices decline significantly, our opportunity to obtain and execute SFD<sup>®</sup> survey contracts may also likely decline, at least in the short term. Therefore, NXT focuses on national oil companies as they have a long-term strategic view and are not as affected by short-term oil fluctuations.

**We are a small business with limited personnel and our inability to segregate duties between administrative staff is an internal control weakness.**

Certain duties that are most appropriately segregated between different employees are, due to our current limited staff, assigned to one individual.

Standard internal control methodology involves the separation of incompatible functions by assigning these functions to separate individuals and in larger organizations to separate departments. We often cannot allocate these functions to separate individuals because our administrative staff is limited.

Although we have adopted alternative control methods designed to mitigate our reduced ability to separate incompatible functions, these alternative controls may not operate at the same level of precision and there is more than a remote likelihood that our internal control over financial reporting will not prevent or detect material misstatements if they should exist in our financial statements. This lack of separation of duties exposes us to potential misappropriation of funds, embezzlement and other forms of fraud and could have a material adverse effect on our business, financial condition and results of operations. (See also Item 15.)

**We may periodically engage in transactions with related parties.**

We may periodically enter into related party transactions. One of the members of NXT's Board, Thomas Valentine, is a partner at the law firm Norton Rose Fulbright Canada LLP, which provides legal services to NXT. Another Director, Theodore Patsellis, is also a board member of PANA Holdings, the parent company of Ataraxia, which holds US\$2,300,000 of convertible debentures. A third Director, Peter Mork, is an employee of Mork Capital, the general partner of MCAPM LP, which together with Mork Capital holds US\$3,375,000 of convertible debentures.

Although we publicly disclose all related party transactions and manage potential conflicts of interest through mandated adherence to our Code of Conduct & Business Ethics and the maintenance of a strong independent Board, all related party transactions have the potential for conflicts of interest that may compromise the ability of Board members to exercise their fiduciary responsibility to the Company.

**Our rights to SFD<sup>®</sup> technology may be challenged and we may need to defend our rights to the technology in the courts.**

For a full history of the Technology Transfer Agreement (the "TTA") see also Item 4. part A, "Information on the Company - History and development of the Company", and Item 4. part B. "Information on the Company - Business Overview – Technology Transfer Agreement".

Our rights to ownership and use of SFD<sup>®</sup> technology depend on Mr. Liszicasz's estate having the lawful right to sell to NXT the exclusive rights to exploit the SFD<sup>®</sup> technology for the exploration of hydrocarbons and the Geothermal Rights as agreed to in the TTA.

The SFD<sup>®</sup> technology is an essential component of our business plan. If a third party challenged our lawful entitlement to this technology, the legal defense of our right to the technology may be expensive and could cause a loss of our right to the SFD<sup>®</sup> technology, or a protracted legal process to assert our right to the technology would have a material adverse effect on the Company's business, financial condition and results of operations.

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A risk exists that an unknown party may claim some legal entitlement to our IP, our rights to commercialize this IP or our right to create SFD<sup>®</sup> devices and processes. However, we believe that such a claim would be without merit.

**Surveys have not been tested over all potential geological conditions.**

SFD<sup>®</sup> surveys have not been tested over all potential geological conditions. Some geological conditions may subsequently be proven to be unsuited for SFD<sup>®</sup> surveys thereby creating unforeseen limitations to the application of SFD<sup>®</sup> surveys.

Any limitation to the application of SFD<sup>®</sup> surveys has the potential of restricting future revenue opportunities and if not properly disclosed to industry clients, such limitations may impact the reputation of the Company with these clients.

**Unless we pursue ongoing technological improvement and development, we may be unable to respond to changes in customer requirements or new competitive technologies.**

We must continue to refine and develop our SFD<sup>®</sup> survey system to make it scalable for growth and to respond to potential future competitive pressures. These improvements require substantial time and resources. Furthermore, even if resources are available, there can be no assurance that the Company will be commercially or technically successful in enhancing the technology. If we are unable to keep pace with new technologies, evolving industry standards and demands, that could have a material adverse effect on our business, financial condition and results of operations.

**The financial statements rely upon estimates and assumptions that could be incorrect.**

The preparation of financial statements requires our management to make estimates and assumptions. These estimates and assumptions affect the reported amounts of assets and liabilities, including the disclosure of contingent assets and liabilities as well as revenues and expenses recorded in our financial statements. Estimates made relate primarily to the measurement of accrued liabilities, stock-based compensation expense, valuation of future income tax assets, estimates for asset retirement obligations, and the useful lives of capital assets and IP.

The estimates and assumptions are reviewed periodically and are based upon the best information available to management; however, we cannot provide assurance that future events will not prove that these estimates and assumptions are inaccurate. Any revisions to our estimates and assumptions may have a material impact on our future reported net income or loss and assets and liabilities.

In 2024 and 2023, the estimates and judgments included the assessment of impairment indicators of intellectual property.

The Company reviews intellectual property for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable. The Company considers both internal and external factors when assessing for potential indicators of impairment of its intellectual property, including the consideration of historical and forecasted SFD<sup>®</sup> related revenues, market capitalization, control premiums, and the SFD<sup>®</sup> related revenue multiples compared to industry peers. When indicators of impairment exist, the Company first compares the total of the estimated undiscounted future cash flows or the estimated sale price to the carrying value of an asset. If the carrying value exceeds these amounts, an impairment loss is recognized for the excess of the carrying value over the estimated fair value of the intellectual property.

Other accounting estimates and judgments that may have a material impact on the financial statements include: the forward-looking assumptions related to the going concern assumption, the estimated useful lives of intellectual property and property, plant and equipment, and the assumptions used to measure stock-based compensation expense.

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**Cyberattacks or other breaches of our technology hardware and software, as well as risks associated with compliance and data privacy could have an adverse effect on our systems, our service to our customers, our reputation, our competitive position, and financial results.**

Our ability to manage our operations successfully is critical to our success. Our business relies on our ability to electronically gather, compile, process, store and distribute data and other information. Unintended interruptions or failures resulting from computer and telecommunications failures, equipment or software malfunction, power outages, catastrophic events, security breaches (such as unauthorized access by hackers), social engineering schemes, unauthorized access, errors in usage by our employees, computer viruses, ransomware or malware, and other events could harm our business.

We have undertaken efforts and other steps to enhance our data security infrastructure. Any security breach or failure in our computer equipment, systems or data could result in the interruption of our business operations and adversely impact our financial results.

**There is no certainty that an investor can trade our common shares on public markets at a stable market price.**

The Company has historically had a limited public market for our common shares on the TSX and the United States OTC Markets Group's Venture Stage Marketplace (the "OTC") and there is a risk that a broader or more active public trading market for our common shares will not develop or be sustained, or that current trading levels will not be sustained.

The market price for the common shares on the exchanges where our common shares are listed has been, and we anticipate will continue to be, very volatile and subject to significant price and volume fluctuations in response to a variety of external and internal factors. This is especially true with respect to emerging companies such as ours. Examples of external factors, which can generally be described as factors that are unrelated to the operating performance or financial condition of any particular company, include changes in interest rates and worldwide economic and market conditions, as well as changes in industry conditions, such as changes in oil and natural gas prices, oil and natural gas inventory levels, regulatory and environment rules, and announcements of technology innovations or new products by other companies. Examples of internal factors, which can generally be described as factors that are directly related to our consolidated financial condition or results of operations, would include release of reports by securities analysts and announcements we may make from time to time relative to our operating performance, clients' exploration results, financing, advances in technology or other business developments.

Because we have a limited history of profitability to date, the market price for the common shares is more volatile than that of a seasoned issuer. Changes in the market price of the common shares, for example, may have no connection with our operating results or the quality of services provided to clients. No predictions or projections can be made as to what the prevailing market price for the common shares will be at any time, or as to what effect, if any, that the sale of common shares or the availability of common shares for sale at any time will have on the prevailing market price. Given the relatively low historic trading volumes, small trades of common shares can adversely and potentially dramatically affect the market prices for those shares. Accordingly, investors in our common shares should anticipate both a volatile stock price and poor liquidity unless these conditions change.

**Our right to issue additional capital stock at any time could have an adverse effect on your proportionate ownership and voting rights.**

Our right to issue additional securities at any time could have an adverse effect on a shareholder's proportionate ownership.

We are authorized under our Articles of Continuance to issue an unlimited number of common shares and unlimited number of Preferred Shares. We may issue common shares and Preferred Shares under such circumstances and in such manner and at such times, prices, amounts and purposes as our Board may, in its discretion, determine to be necessary and appropriate, subject to compliance with all applicable exchange regulations and corporate and securities laws. Any such issue of common shares or Preferred Shares would dilute the proportionate ownership of the current holders of those securities.

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**We may not be able to protect our trade secrets and IP from competitors who would use this knowledge to eliminate or reduce our technological advantage.**

Our success and future revenue growth will depend, in part, on our ability to protect our IP. We have commenced an IP strategy process to obtain patents related to the SFD<sup>®</sup> technology, while also utilizing “trade secrets” protection of the proprietary nature of our technology, as applicable.

Initiatives to expand and protect our IP (including patenting and new research and development initiatives) have been very successful. Squire Patton Boggs LLP, a United States-based leader in IP protection, has been advising NXT on our IP strategy, including the prior filing of an initial United States provisional patent application in May 2012. In November 2014, NXT filed a related patent amendment submission in the United States and since that time has undertaken new patent applications in select strategic international markets.

So far, SFD<sup>®</sup> patents have been granted in India (July 2021), Russia (January 2017), Japan (July 2017), Canada (August 2017), Mexico (September 2017), the United States (two patents were granted in November 2017 and September 2018, respectively), China (April 2018), and in the European Patent Office (January 2020). In summary, the total number countries granting our patents is forty-seven. In addition, one more patent application in Brazil is pending. The patents serve an important purpose of the protection for our proprietary SFD<sup>®</sup> technology. The patents also serve as multiple independent third-party recognitions of the technological invention in terms of practical applicability, conceptual novelty, and knowledge advancement.

The patent protection application process requires disclosure of at least some aspects of our SFD<sup>®</sup> technology to third parties and ultimately public disclosure. This disclosure could significantly increase the risk of unlawful use of our technology by third parties. Furthermore, we have no assurance that, even with patent protection, a patent could be registered to protect our IP in all or any jurisdictions within North America or other countries throughout the world. If registered, there can be no assurance that it would be sufficiently broad to protect our technology or that any potential patent would not be challenged, invalidated or circumvented or that any right granted thereunder would provide meaningful protection or a competitive advantage to us. Finally, protection afforded by patents is limited by the financial resources available to legally defend IP rights. We currently do not possess the required financial resources to fund a lengthy defense of our rights if challenged by a much larger competitor or an oil and gas company.

We enjoy common and contract law protection of our technology and trade secrets. Employees and contractors are governed by confidentiality agreements as well as a fiduciary responsibility to protect our technology, supporting documentation and other proprietary information.

Our strongest protection of the SFD<sup>®</sup> technology comes from restricting access to knowledge concerning the technology. Only a very limited number of NXT personnel have access to or knowledge of the underlying SFD<sup>®</sup> technology and no one employee has access or knowledge of all aspects of the SFD<sup>®</sup> system. Currently, no third party has any significant knowledge of the technology. As further protection, SFD<sup>®</sup> equipment does not leave the direct control of NXT employees, thereby preventing unauthorized replication of the equipment.

The Company reassesses the appropriateness of its IP protection strategy on an ongoing basis and seeks advice from IP advisors as necessary.

It is possible that a third party will copy or otherwise obtain and use the Company’s technology without authorization, develop a similar technology independently or design around the Company’s secrets. Accordingly, there can be no assurance that the steps taken by the Company to prevent misappropriation or infringement of our IP will be successful.

An inability to protect our IP would make it possible for competitors to offer similar products and services that could have a material adverse effect on our business, financial condition and results of operations.

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## **Development, Commercialization, and Protection of the Geothermal Rights**

With the acquisition of the Geothermal Rights, the Company will continue to refine and develop the SFD<sup>®</sup> survey system to commercialize the Geothermal Rights. This development requires substantial time and resources, and continued government assistance is not guaranteed. Furthermore, even if resources are available, there can be no assurance that the Company will be commercially or technically successful in enhancing the technology. If we are unable to develop and commercialize the geothermal applications of SFD<sup>®</sup> technologies, or adapt to evolving industry standards and demands, these could have an adverse effect on our business, financial condition, and results of operations.

### **We experience operational hazards in our flight operations that may subject us to potential claims in the event that an incident or accident occurs.**

We experience operational hazards in our flight operations that may subject us to potential claims in the event that an incident or accident occurs. The flight operations of SFD<sup>®</sup> surveys are subject to the hazards associated with general flight operations. An aircraft accident may cause personal injury and loss of life, as well as severe damage to and destruction of property or the SFD<sup>®</sup> sensors and related equipment.

Independent third parties provide all the services required to maintain and operate the aircraft and they mitigate the primary risks of flight operations. These services are provided by an organization accredited by Transport Canada to operate aircraft in accordance with Transport Canada's approved and audited operating procedures. The aircraft operator employs the required pilots, aircraft maintenance engineers, support personnel and ensures that they operate within their Transport Canada operating certificate. Our employees do not perform any airworthiness or flight safety operations.

We require the flight contractor to maintain appropriate insurance coverage for the risks associated with aircraft operations and we obtain insurance coverage to provide us with additional risk protection. In addition, we maintain general business insurance coverage and believe that this insurance and the policy limits are appropriate for the operational risks that we incur.

Despite our policy to not operate the aircraft directly and our insurance coverage, we cannot avoid or alternatively be insured for all risks of flight operations. In the event of an incident or accident, we may be sued by injured parties in excess of our policy limits or for damages that are not covered by our insurance policy. The magnitude of a lawsuit of this nature is not determinable. Furthermore, to the extent that our SFD<sup>®</sup> equipment is damaged, we may be unable to conduct SFD<sup>®</sup> surveys for several months following an accident.

### **We conduct operations in foreign countries, which exposes us to several risks that may have a material adverse effect on the Company.**

**Criminal Activity and Social Instability** – We operate in foreign countries that can experience significant social upheaval and criminal activity. Systemic criminal activity in a country or isolated criminal acts may disrupt operations, impact our ability to earn revenue, dramatically add to our cost of operations or potentially prevent us from earning any survey revenue in a country.

**Political Instability** - Any changes in regulations or shifts in political attitudes are beyond the control of the Company and may adversely affect our business. Exploration may be affected in varying degrees by government regulations which have the effect of restricting exploration and production activities. These changes may adversely impact the laws and policies governing price controls, export controls, foreign exchange controls, income taxes, expropriation of property, environmental legislation, site safety or other areas.

Currently, there are no restrictions (other than the payment of local withholding taxes) on the repatriation back to Canada of our earnings in foreign countries in which we have operated, such as Nigeria; however, there can be no assurance that significant restrictions on repatriation to Canada of earnings will not be imposed in the future.

Our operations may also be adversely affected by changes in laws and policies in Canada impacting foreign travel and immigration, foreign trade, taxation and investment.

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Commercial Disputes – While operating in a foreign country, we are subjected to local commercial laws which often involve executing contracts in a foreign language. Although every effort is made to ensure we have access to an accurate English translation, misunderstanding and potential disputes between parties may arise.

In the event of a dispute arising in connection with our foreign operations for any reason, we may be subject to the exclusive jurisdiction of foreign courts or may not be successful in subjecting foreign persons to the jurisdictions of the courts of Canada or enforcing Canadian judgments in such other jurisdictions. We may also be hindered or prevented from enforcing our rights with respect to a government instrumentality because of the doctrine of sovereign immunity.

Accordingly, these risk factors have the potential of adversely reducing the level of survey revenue from our clients, our ability to operate effectively or our ability to be paid for our services and may have a material adverse effect on our financial position.

Where possible, NXT utilizes risk mitigation products offered by entities such as Export Development Canada (“EDC”). EDC financial products include insurance coverage of contract accounts receivable, guarantee support for contract performance bonds and wrongful call insurance for such bonds.

Corruption and Bribery - Foreign markets may be susceptible to a higher risk of corruption and bribery. All of NXT’s employees, contractors and independent sales agents are required to adhere to the Company’s code of conduct and business ethics, which prohibits illegal activities, including any acts of bribery or corruption.

**We rely upon the right to conduct airborne surveys in foreign countries. These foreign operations expose us to the risks that we will be prevented from conducting surveys when requested by clients.**

The operation of our business, namely conducting aerial SFD<sup>®</sup> surveys and interpreting SFD<sup>®</sup> data, is not subject to material governmental or environmental regulation in Canada and the United States with the exception of flight rules issued by Transport Canada and the Federal Aviation Administration governing the use of commercial aircraft, including rules relating to low altitude flights. The requirements in other countries vary greatly and may require permits and/or provide other restrictions to conducting flight operations in the country that may restrict our ability to perform SFD<sup>®</sup> surveys.

For example, in South American countries in which we have operated, such as Colombia and Bolivia, SFD<sup>®</sup> surveys must comply with additional requirements not encountered in Canada and the United States, including customs obligations and bonds related to the importation and exportation of the aircraft into the country, obtaining permits from the local aviation authority, and obtaining permits from the local Air Force. We have successfully operated in South America, Africa, Türkiye, and other global regions in accordance with these typical requirements.

Based on our North America and international experience to date, we do not anticipate any government controls or regulations that will prevent timely completion of SFD<sup>®</sup> surveys. However, we may encounter government restrictions in other countries that may impact or restrict our ability to conduct surveys.

If we encounter government regulation and restrictions that impact or prevent us from conducting surveys in any country, then we will not be able to earn revenue in the country and we may be exposed to forfeiting any performance bonds which may have been issued.

**Credit risk arises from the potential that the Company may incur a loss if counterparty to a financial instrument fails to meet its obligation in accordance with agreed terms.**

The Company’s financial instruments that are exposed to concentrations of credit risk consist primarily of cash and cash equivalents, short-term investments and accounts receivable. The carrying value of cash and cash equivalents, short-term investments, and accounts receivable reflects management’s assessment of credit risk. On December 31, 2024, cash and cash equivalents included balances in bank accounts placed with financial institutions with investment grade credit ratings. The Company manages accounts receivable credit risk by requiring advance payments before entering into certain contract milestones and when possible, accounts receivable insurance.

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## **Tax Matters**

The Company and its subsidiaries are subject to income, value added and other taxes in Canada, the United States and numerous foreign jurisdictions. Changes in tax laws or interpretations thereof or tax rates in the jurisdictions in which the Company or its subsidiaries do business could adversely affect the Company's results from operations, returns to shareholders, and cash flow. Our effective tax rates could also be affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities, or changes in tax laws or their interpretation. While management believes the Company and its subsidiaries are in compliance with current prevailing tax laws and requirements, one or more taxing jurisdictions could seek to impose incremental or new taxes on the Company or its subsidiaries or the Company or its subsidiaries could be subject to assessment, reassessment, audit, investigation, inquiry or judicial or administrative proceedings by any such taxing jurisdiction. The timing or impacts of any such assessment, reassessment, audit, investigation, inquiry or judicial or administrative proceedings or any future changes in tax laws, including the impacts of proposed regulations, cannot be predicted. Any adverse tax developments, including legislative changes, judicial holdings or administrative interpretations, could have a material and adverse effect on the results of operations, financial condition and cash flows of the Company.

## **Occurrence of Natural Disasters, Epidemics or Other Events**

Our business could be materially and adversely affected by natural disasters, such as fires or floods, the outbreak of a widespread health epidemic or pandemic, or other events, such as wars, including the military conflicts, acts of terrorism, power shortages or communication interruptions. The occurrence of a disaster or similar event could materially disrupt our business and operations. These events could also cause us to close our operating facilities temporarily, which would severely disrupt our operations and have a material adverse effect on our business, financial condition and results of operations. In addition, our net sales could be materially reduced to the extent that a natural disaster, health epidemic or other major event harms the economies of the countries in which we operate. As such, the outbreak of hostilities between Russia and Ukraine could result in more widespread conflict and could have a severe adverse effect on the surrounding regions and the related markets, and on our business, financial condition and results of operations. The duration of the conflicts and related events and whether they escalate further cannot be predicted. Our operations could also be severely disrupted if our customers, partners and other third-party providers or other participants were affected by natural disasters, health epidemics, or other major events, such as wars and military conflicts.

## **Tariff and Trade Risk**

Ongoing geopolitical tensions may lead to trade restrictions or tariffs that may impact NXT's business. In February 2025, American President Donald Trump, imposed and then delayed his imposition of tariffs on Canadian products imported to the US, including oil and gas imports and operating and aircraft supplies. Tariffs may disrupt trade, increase energy costs, and strain United States and Canadian relations. Depending on responses from Canada and the rest of the international community, trade tensions may exacerbate and could potentially escalate into a broader trade war, further impacting the economy and destabilizing markets – including the oil and natural gas market. Trade restrictions and tariffs may also increase volatility in, or have an adverse impact on, exchange rates and interest rates. Such occurrences may materially affect NXT's business, cashflows and financial position.

## **You will be subject to the penny stock rules to the extent our stock price on the OTCQB is less than \$5.00.**

Since the common shares are not listed on a national stock exchange within the United States, trading in the common shares on the OTCQB is subject, to the extent the market price for the common shares is less than \$5.00 per share, to a number of regulations known as the "penny stock rules". The penny stock rules, subject to certain exemptions, require a broker-dealer to deliver a standardized risk disclosure, the form of which is developed by the U.S. Securities and Exchange Commission (the "SEC") to provide the customer with additional information, including current bid and offer quotations for the penny stock, the compensation of the broker-dealer and its salesperson in the transaction, monthly account statements showing the market value of each penny stock held in the customer's account, make a special written determination that the penny stock is a suitable investment for the purchaser and to receive the purchaser's written agreement to the transaction. To the extent these requirements may be applicable, they will reduce the level of trading activity in the secondary market for the common shares and may severely and adversely affect the ability of broker-dealers to sell the common shares.

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**You should not expect to receive dividends in the foreseeable future.**

We have never paid any cash dividends on our common shares and we do not anticipate that we will pay any dividends in the foreseeable future. Our current business plan is to retain any future earnings to finance the expansion of our business. Any future determination to pay cash dividends will be at the discretion of our Board and will be dependent upon our consolidated financial condition, results of operations, capital requirements and other factors as our Board may deem relevant at that time.

**We are a Canadian Company and our nationality may impair the enforceability of a judgment for any person resident outside Canada.**

Since we are a Canadian company and most of our assets and key personnel are located in Canada, you may not be able to enforce a U.S. judgment for claims you may bring against us, our assets, our key personnel or many of the experts named in this document. This may prevent you from receiving compensation to which you may otherwise have a claim.

We are organized under the laws of Alberta, Canada and substantially all of our assets are normally located in Canada. In addition, all but two of our current members of our Board and all of our officers are residents of Canada. As a result, it may be impossible for you to affect service of process upon us or these individuals within the U.S. or to enforce any judgments in civil and commercial matters, including judgments under U.S. federal securities laws. In addition, a Canadian court may not permit you to bring an original action in Canada or to enforce in Canada a judgment of a U.S. court based upon civil liability provisions of the U.S. federal securities laws.

**Proposed legislation in the United States Congress, including changes in U.S. tax law, may adversely impact the Company and the value of the common shares.**

Changes to U.S. tax laws (which changes may have retroactive application) could adversely affect the Company or holders of the common shares. In recent years, many changes to U.S. federal income tax laws have been proposed and made, and additional changes to U.S. federal income tax laws are likely to continue to occur in the future.

The U.S. Congress is currently considering numerous items of legislation which may be enacted prospectively or with retroactive effect, which legislation could adversely impact the Company's financial performance and the value of the common shares. Additionally, states in which the Company operates or owns assets may impose new or increased taxes. If enacted, most of the proposals would be effective for the current or later years. The proposed legislation remains subject to change, and its impact on the Company and holders of the common shares is uncertain.

Changes to U.S. tax laws (which changes may have retroactive application) could adversely affect the Company or holders of the common shares. In recent years, many changes to U.S. federal income tax laws have been proposed and made, and additional changes to U.S. federal income tax laws are likely to continue to occur in the future.

The U.S. Congress is currently considering numerous items of legislation which may be enacted prospectively or with retroactive effect, which legislation could adversely impact the Company's financial performance and the value of the common shares. Additionally, states in which the Company operates or owns assets may impose new or increased taxes. If enacted, most of the proposals would be effective for the current or later years. The proposed legislation remains subject to change, and its impact on the Company and holders of the common shares is uncertain.

**We caution that the factors referred to above and those referred to as part of particular forward-looking statements may not be exhaustive and that new risk factors emerge from time to time in our rapidly changing business environment.**

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## ITEM 4. INFORMATION ON THE COMPANY

### A. History and development of the Company.

We are a technology company focused on providing a service to oil and natural gas exploration clients using our proprietary SFD<sup>®</sup> remote sensing airborne survey system. SFD<sup>®</sup> and NXT<sup>®</sup> are both registered trademarks of NXT Energy Solutions Inc.

NXT's corporate history is summarized as follows:

- NXT was incorporated under the laws of the State of Nevada on September 27, 1994 as Auric Mining Corporation.
- In January 1996, NXT acquired all of the common stock of NXT Energy USA, Inc. (which was then known as Pinnacle Oil Inc.) from its shareholders in exchange for common shares. As a consequence of this reverse acquisition, NXT Energy USA Inc. became a wholly owned subsidiary and its shareholders acquired a 92% controlling interest in NXT's common shares.
- Prior to this reverse acquisition transaction, NXT was a corporate shell conducting no active business, and NXT Energy USA Inc. was a development stage R&D enterprise holding the worldwide rights to use what is now our SFD<sup>®</sup> technology for hydrocarbon exploration purposes.
- Shortly thereafter, on February 23, 1996 we changed our name to Pinnacle Oil International, Inc. and on June 13, 2000, subsequently changed our name to Energy Exploration Technologies.
- On October 24, 2003, our shareholders approved the continuance of the Company from the State of Nevada to the Province of Alberta, Canada under the Business Corporations Act (Alberta) (the "ABCA"). Also, our name was modified to Energy Exploration Technologies Inc. ("EETI").
- On September 22, 2008 EETI changed its name to NXT Energy Solutions Inc. by way of Articles of Amendment filed pursuant to the ABCA.
- At the Annual Meeting of Shareholders on August 2, 2023 shareholders approved the cancellation of the outstanding Series 1 preferred shares and approve the creation of the Series 2 Preferred Shares to facilitate the conversion of the convertible debentures to be issued under the Ataraxia Subscription Agreement (as defined herein).

Our registered office is located at 302, 3320 – 17<sup>th</sup> AVE SW, Calgary, Alberta, Canada, T3E 0B4 and our telephone number is (403) 264-7020.

We are a reporting issuer in Alberta, Ontario, and British Columbia and are principally governed by the Alberta Securities Commission in accordance with the *Securities Act (Alberta)* and the *Business Corporations Act (Alberta)*. We are a foreign private issuer under United States securities laws and are subject to the regulation of the US Securities and Exchange Commission in accordance with the Exchange Act.

The underlying technology employed by our SFD<sup>®</sup> survey system was invented by Mr. Liszicasz, our former Chairman, President and Chief Executive Officer ("CEO"). The technology was initially licensed to the Company by Mr. Liszicasz until December 31, 2006 through a series of consecutive license agreements. On December 31, 2006, we obtained the rights to the technology from Mr. Liszicasz pursuant to the terms of the TTA.

Upon execution of the TTA, Mr. Liszicasz transferred to us all his rights and entitlements to the SFD<sup>®</sup> technology for use in the field of hydrocarbon exploration.

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On April 18, 2021 the TTA was amended so that Mr. Liszicasz transferred to us all his rights and entitlements to the SFD<sup>®</sup> technology for the use in the field of geothermal resources. All other all rights, title, and interest in and to the SFD<sup>®</sup> technologies for all other commercial applications remained with Mr. Liszicasz.

SFD<sup>®</sup> technology for the purposes of the TTA is defined as the theories of quantum physics and engineering which are utilized in the operation of SFD<sup>®</sup> used by NXT for the reception, collection and recording of subsurface geological stresses for hydrocarbon exploration and geothermal resources.

Our business does not normally rely on significant capital expenditures other than required regulatory additions to the aircraft. For 2025 we do not anticipate further significant upgrades for the aircraft. For the last three fiscal years, the Company made capital expenditures for property and equipment of \$27,029 (2024), \$32,322 (2023), and \$nil (2022).

The Company does not currently have any significant capital expenditures in progress, or planned for the short term.

SEC maintains an internet site (<http://www.sec.gov>), which contains reports, proxy and statements, and other information regarding NXT that we file electronically with the SEC. Our website is <http://www.nxtenergy.com>.

## **B. Business overview.**

### **Description of the nature of the Company's operations and principal activities**

NXT Energy Solutions Inc. is a Calgary-based technology company whose proprietary airborne SFD<sup>®</sup> survey system, applied in numerous basins around the world, uses the principles of quantum mechanics to infer stress anomalies of exploration interest. The method can be used both onshore and offshore to remotely identify areas conducive to fluid entrapment in order to recommend areas with commercial hydrocarbon and/or geothermal potential. The SFD<sup>®</sup> survey system enables our clients to focus their exploration decisions concerning land commitments, data acquisition expenditures and prospect prioritization on areas with the greatest potential. SFD<sup>®</sup> is environmentally friendly and unaffected by ground security issues or difficult terrain and is the registered trademark of NXT Energy Solutions Inc. NXT Energy Solutions Inc. provides its clients with an effective and reliable method to reduce time, costs, and risks related to exploration.

We utilize our proprietary, airborne SFD<sup>®</sup> survey system to provide a service for the geothermal and oil and gas exploration industry. NXT provides a rapid and cost-effective method for our clients to evaluate large land areas for their exploration potential. NXT's principal markets have been in South America, Africa, the Middle East and Asia.

The underlying technology employed by our SFD<sup>®</sup> survey system was invented by Mr. Liszicasz, our former President and Chief Executive Officer, and Chairman. The technology was initially licensed to the Company by Mr. Liszicasz until December 31, 2006 through a series of consecutive license agreements. On December 31, 2006 we obtained the rights to the technology from Mr. Liszicasz pursuant to the terms of the TTA.

Upon execution of the TTA, Mr. Liszicasz transferred to NXT all his rights and entitlements to the SFD<sup>®</sup> technology for use in the field of hydrocarbon exploration and on April 18, 2021 all his rights and entitlements to the SFD<sup>®</sup> technology for geothermal resources.

For further details of the TTA, see "Exhibit 4.1".

SFD<sup>®</sup> technology for the purposes of the TTA is defined as the theories of quantum physics and engineering which are utilized in the operation of stress field detectors used by NXT for the reception, collection and recording of subsurface geological stresses for hydrocarbon exploration and geothermal resources.

SFD<sup>®</sup> sensors remotely respond to gravity perturbations that are associated with subsurface density and stress regimes that are meaningful for hydrocarbon and geothermal exploration. These responses are captured as raw data that, when interpreted, can provide a qualitative method to detect the presence of geological features such as structures, faults, fractures and reefs that are often associated with fluid accumulations and transport. The SFD<sup>®</sup> technology can be deployed over any terrain in onshore, offshore and near-shore environments and has been used both for prospect level exploration and as a reconnaissance tool in in frontier and under-explored areas. The SFD<sup>®</sup> survey system has been demonstrated to quickly focus exploration resources, offering the benefit of reducing the risk, time and expense associated with the upstream cycle. As part of NXT's SFD<sup>®</sup> services, recommendations with rankings are provided to the customer which helps prioritize their highest value prospects for exploration.

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Following completion of the aerial surveys, we deliver to our clients a detailed report and maps of the surveyed area that identifies, ranks and recommends areas with SFD<sup>®</sup> indications of reservoir potential.

In 2006, we commenced our current business model and began providing SFD<sup>®</sup> survey services to clients on a fee-for-service basis. In accordance with this model, we have not invested either directly or indirectly in exploration or development wells or engaged in other exploration or production activities. Our current business model minimizes our capital requirements, thereby conserving cash and minimizes any perceived or real conflicts between the interests of NXT and its survey clients.

NXT's primary business model is to earn revenues by conducting SFD<sup>®</sup> surveys for clients on a fee-for-service basis. Secondly, we may be able to negotiate to earn revenue from gross overriding royalty income and/or other incentive fees from clients should they generate production on areas recommended by SFD<sup>®</sup> surveys. Finally, in the future, we may earn a fee by providing other related geological and geophysical integration services to clients.

We also continue to utilize high quality local sales representatives with key knowledge of their respective areas, potential clients and the exploration potential of a region allowing NXT to cover larger areas and more clients with minimum fixed cost. Our sales representatives continue to pursue SFD<sup>®</sup> opportunities in numerous regions including Africa, Latin America, and Asia. Furthermore, to ensure our sales representatives follow industry best practices, each representative is required to annually certify they adhere to NXT's code of conduct and business ethics.

NXT has been effective in positioning the SFD<sup>®</sup> method as an established geophysical tool for oil and gas exploration following the successful completion of projects in Canada, the United States, Columbia, Argentina, Bolivia, Mexico, Pakistan, Africa and most recently in Türkiye. Our efforts have been supported with the publication of technical papers, creation of project case studies and the development of a strong list of references and recommendation letters. In addition, NXT has now been granted patents or received patent allowance in forty-seven separate countries.

Our overall objective remains to continue to increase industry awareness and appreciation of the value of our SFD<sup>®</sup> survey system and our strategy to achieve this includes maximizing client endorsement opportunities (such as through joint case studies) and targeting the most appropriate markets (i.e., where SFD<sup>®</sup> provides the maximum benefits). Our specific tactics include:

1. focusing the majority of sales resources on high profile primary markets with national oil companies that offer maximum opportunities for success;
2. building upon success in this initial market, and step out to other markets in Latin America, the Middle East, Africa and South Asia;
3. pursuing expressions of interest from qualified potential client "bluebirds" from all other locations in the world. The bluebird model is defined as an opportunity that arises, not from deliberate targeted sales initiatives, but in response to unsolicited client enquiries;
4. continuing to conduct pilot surveys to expand our knowledge base and provide documentation to support the use of SFD<sup>®</sup> in new applications. Each new application opens more market opportunities and provides valuable case studies to support our sales initiatives; and
5. responding to opportunities to present at technical conferences, publish papers in periodicals and generally maximize our opportunities to educate the industry on SFD<sup>®</sup> capabilities and document case study successes.

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As we continue to progress and grow our project pipeline on a fee-for-survey-projects basis, we remain optimistic given our progress during 2024.

### Description of the principal markets in which the Company competes

We have an opportunity to provide our services in any region of the world where oil and gas exploration activities are conducted. However, we choose to be strategic and focus our limited marketing and sales resources in a limited number of markets.

The Company generates revenue from its SFD<sup>®</sup> survey system that enables the clients to focus their exploration decisions concerning land commitments, data acquisition expenditures and prospect prioritization on areas with the greatest potential. NXT conducts all of its survey operations from its head office in Canada, and occasionally maintains administrative offices in foreign locations if and when needed. Revenue fluctuations are a normal part of SFD<sup>®</sup> related revenue and can vary significantly year-over-year.

In 2023 and 2024, NXT's revenue was from SFD<sup>®</sup> survey to oil and gas exploration companies in Türkiye. There were no Revenues in 2022. Revenues for 2023 and 2024 were generated solely from the Hydrocarbon Right. There were no revenues from the Geothermal Right in any of the periods.

A summary of SFD<sup>®</sup> related revenues derived in our primary geographic market segments for the last 3 fiscal years, and highlights of global survey operations, follows:

	For the years ended December 31,		
	2024	2023	2022
International	\$ 644,294	\$ 2,145,716	\$ -
Canada	-	-	-
	644,294	2,145,716	-

### International Markets

#### *SFD<sup>®</sup> Survey in Africa*

On September 24, 2024 the Company announced that it entered into a contract with its Strategic Alliance Partner, Synergy, to provide a second SFD<sup>®</sup> survey for an oil and gas exploration company in Africa (the “African SFD<sup>®</sup> Survey”). NXT completed SFD<sup>®</sup> data acquisition over 14 flight days in January of 2025. NXT's interpretation of the survey results, and recommendations with respect to such survey, are expected to be delivered during the second quarter of 2025.

#### *SFD<sup>®</sup> Survey in Pakistan*

On November 4, 2024 the Company announced that it entered into a contract to provide an SFD<sup>®</sup> survey for AL-Haj Enterprises Private Limited (the “AL-Haj Enterprises Private Limited SFD<sup>®</sup> Survey”). Data acquisition operations, as well as NXT's interpretation of the survey results and recommendations with respect to such survey are expected to commence and finish in the fourth quarter of 2025.

#### *SFD<sup>®</sup> Survey in Southeast Asia*

On May 22, 2024 the Company announced that it entered into a contract to provide an SFD<sup>®</sup> survey to an independent oil and gas exploration company in Southeast Asia (the “Southeast Asia SFD<sup>®</sup> Survey”). Data acquisition operations, interpretation of the survey results and recommendations with respect to such survey are expected to commence and be completed in Q2-25. NXT received a mobilization fee of approximately US\$175,253 in Q3-24 for this SFD<sup>®</sup> survey. The SFD<sup>®</sup> survey was originally expected to be conducted in Q3-24, but was delayed due to aircraft scheduling – which is now resolved. This survey represents the Company's entry into a new, highly active exploration region.

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*SFD® Survey in Türkiye*

On September 5, 2023 the Company announced that it had signed a contract to provide an SFD® survey to an independent oil and gas exploration company in Türkiye, which is strategically located at the junction of Eastern Europe, Central Asia and the Middle East (the “Turkish SFD® Survey”). NXT delivered the final SFD® survey results to its Turkish customer and performed the integration of SFD® data with the customers’ existing geological and geophysical data in March 2024. All flight operations related to the data acquisition survey phase were completed in January 2024. As part of NXT’s SFD® services, recommendations with rankings are provided to the customer identifying their highest value prospects for exploration. NXT has been fully paid for this survey and is actively pursuing additional SFD® survey opportunities in the Turkish region.

Geothermal Update

*Geothermal SFD® Survey in Alberta, Canada*

On August 21, 2024 the Company announced that it entered into a contract to provide a geothermal SFD® survey to Alberta Geothermal Resource Recovery Inc. (“AGRRI”). The AGRRI survey is an important milestone in NXT’s development of the geothermal application of our SFD® technology; our first geothermal survey for a client. The value to NXT is to demonstrate the commerciality of SFD® in the geothermal domain. The survey has been performed and results are being reviewed.

*Acquisition of the Geothermal Right*

The Company acquired the SFD® technology rights for geothermal resources (“Geothermal Right”) from NXT’s former Chairman, President and Chief Executive Officer (“CEO”), Mr. George Liszicasz (the “Former CEO”) on April 18, 2021. One portion of the consideration deliverable by the Company in connection with the acquisition of the Geothermal Right is still outstanding. A US\$200,000 payment will become due in the event that the Company’s cash balance exceeds CDN\$5,000,000 due to receipt of specifically defined funds from operations. The Board has determined that it is not probable that the milestone will be achieved, and accordingly, it has not been recognized in the financial statements.

Progress continues with respect to the development of the geothermal sensor technology. The Company’s first project related to such technology with AGGRI is testing, identifying, and analyzing the desired elements of the SFD® geothermal sensor response over known geothermal areas, with the ultimate goal of providing a green upstream geophysical service for advancing renewable power initiatives in Canada and abroad. As of the date of this 20-F, the Company funding for the next phase of the National Research Council of Canada Industrial Research Assistance Program (“NRC IRAP”) research has not been finalized.

**Description of seasonality of the Company’s main business**

There is no seasonality to our business. NXT does however, have a very cyclical business, as revenue activity is dependent upon the level of capital investment in exploration drilling in the oil & gas industry and the size and timing of a limited number of SFD® survey contracts each year.

**Description of the sources and availability of raw materials**

We do not foresee any constraints upon materials or equipment that will impede our ability to execute our business plan or affect our ability to conduct and/or expand our business. Our main direct project input costs are aircraft operating costs and data interpretation staff.

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In order to conduct our survey operations, we require the following:

- *Survey aircraft* – Air Partners Corp. (“Air Partners”), a Calgary-based air-charter operator, provides crew and maintenance services for our survey operations worldwide. We currently rely on Air Partners to manage and operate the aircraft which we use for our SFD<sup>®</sup> survey operations.
- *SFD<sup>®</sup> sensors* – All of our current 34 survey sensors were manufactured in-house. Certain machining is required by third-party machine shops, with final assembly performed by our technical staff. The sensors, once assembled, require flight testing prior to being considered acceptable for operational use. Not all sensors meet the performance criteria for operational use; however, we have demonstrated our ability to manufacture new functional SFD<sup>®</sup> sensors.
- *SFD<sup>®</sup> assembly* – The units in which the sensors are housed in are custom-designed, fabricated and assembled in-house or through subcontracted vendors. We utilize the services of Transport Canada approved Design Approval Representatives to prepare subsequent type certificates (“STC”) for the installation of our SFD<sup>®</sup> units in each aircraft that we utilize for surveys. The time to obtain an STC approval for the installation of our SFD<sup>®</sup> units into any proposed aircraft type may require several months.
- *Computer hardware and software (Data Acquisition System, SFD<sup>®</sup> Signal Conditioning Unit, and data interpretation software)* – The Data Acquisition System and software was developed by in-house personnel and is being utilized on SFD<sup>®</sup> surveys (“Data Acquisition System”). The hardware we use in our SFD<sup>®</sup> survey systems (other than the SFD<sup>®</sup> unit), and the balance of the computer software we use, are all readily available from retail or wholesale sources.

We are not dependent upon any other third-party contract manufacturers or suppliers to satisfy our technology requirements.

### **Description of marketing channels**

We largely use direct sales methods with use of independent commissioned sales representatives in international markets.

### **Summary information on dependence on patents, licenses, and contracts**

#### **Patents**

NXT has been granted SFD<sup>®</sup> patents in Brazil (February 2022), India (July 2021), Russia (January 2017), Japan (July 2017), Canada (August 2017), Mexico (September 2017), the United States (two patents were granted in November 2017 and September 2018, respectively), China (April 2018), and in the European Union (January 2020). In total, NXT has obtained SFD<sup>®</sup> patents in forty-seven jurisdictions. These patents protect our proprietary SFD<sup>®</sup> technology and serve as independent third-party recognition of our technological invention in terms of practical applicability, conceptual novelty, and knowledge advancement.

#### **Basis for statements made regarding competitive position**

NXT’s SFD<sup>®</sup> airborne survey service is based upon a proprietary technology, which is capable of remotely identifying, from a survey aircraft, subsurface anomalies associated with potential hydrocarbon traps with a resolution that it believes is technically superior to other airborne survey systems. To the Company’s knowledge, there is no other company employing technology comparable to its SFD<sup>®</sup> survey system for oil and natural gas and geothermal exploration.

Seismic is the standard technology used by the oil and gas industry to image subsurface structures. It is our view that the SFD<sup>®</sup> survey system is highly complementary to seismic analysis. NXT’s system may reduce the need for seismic in wide-area reconnaissance but will not replace the role of seismic in verifying structure, closure, and selecting drilling locations. The seismic industry is competitive with many international and regional service providers.

The SFD<sup>®</sup> system can be used as a focusing tool for seismic. With an SFD<sup>®</sup> survey, a large tract (that is, a tract over 5,000 square kilometers) of land can be evaluated quickly to identify locations with indications of reservoir potential. Seismic surveys, although effective in identifying these locations, are much more expensive, require significantly more time, and impose a much greater negative impact on local communities and the environment. Deploying an SFD<sup>®</sup> survey first can provide necessary information to target a seismic program over a limited area of locations selected by SFD<sup>®</sup>. This approach can result in a more effective seismic program and reduce the overall cost, time, community resistance, and environmental impact required to locate and qualify a prospect.

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The energy industry uses other technologies for wide area oil and natural gas reconnaissance exploration, such as aeromagnetic and gravity surveys. These systems can provide regional geological information, such as basement depth, sedimentary thickness and major faulting, and structural development.

## Description of material effects of governmental & environmental regulation

### SFD<sup>®</sup> Survey Flight Operations

The operation of our business, namely conducting aerial SFD<sup>®</sup> surveys and interpreting SFD<sup>®</sup> data, is not subject to material governmental or environmental regulation in Canada or the United States with the exception of flight rules issued by Transport Canada and the Federal Aviation Authority governing the use of commercial aircraft, including rules relating to low altitude flights. The requirements in other countries vary greatly and may require permits and/or provide other restrictions to conducting flight operations in the country that may restrict our ability to perform SFD<sup>®</sup> surveys as freely as in Canada and the United States.

SFD<sup>®</sup> surveys in other countries must often comply with three requirements not encountered in Canada and the United States. These requirements usually include, but are not limited to:

- i) customs obligations and bonds related to the importation and exportation of the aircraft into the country;
- ii) obtaining permits from the local aviation authority; and
- iii) obtaining permits from the Air Force.

NXT has successfully operated in several different countries in accordance with these requirements.

With our past experience in Canada, the United States, Türkiye, Nigeria, Bolivia, Mexico, Colombia and other countries, we do not anticipate any unusual government controls or regulations that might significantly prevent timely completion of SFD<sup>®</sup> surveys. However, we may encounter unforeseen government regulations or restrictions in other countries that may impair or restrict our ability to conduct surveys, which could limit our ability to earn revenue or potentially expose us to forfeiture of performance bonds.

### C. Organizational structure.

The following table provides a list of all subsidiaries and other companies controlled by NXT:

Subsidiaries	Date and Manner of Incorporation	Authorized Share Capital	Issued and Outstanding Shares	Nature of the Business	% of each Class of Shares owned by NXT
NXT Energy USA, Inc.	October 20, 1995 by Articles of Incorporation – State of Nevada	20,000,000 common shares	5,000,000 common shares	Inactive	100%
NXT Aero USA, Inc.	August 28, 2000 by Articles of Incorporation – State of Nevada	1,000 common shares 4,000 preferred shares	100 common shares	Inactive	100%
Cascade Petroleum Inc. (Formerly Survey Services International Inc.) <sup>1</sup>	September 6, 2011 by Articles of Incorporation – Province of Alberta	Unlimited number of common shares	100 common shares	Inactive	100%
NXT Energy Services (SFD) Inc.	December 2008 by Federal Articles of Incorporation – Canada	Unlimited number of common shares	100 common shares	Inactive	100%
PetroCaza Exploration Inc.	May 2015 by Articles of Incorporation – Province of Alberta	Unlimited number of common and preferred shares	100 common shares	Inactive	100%

<sup>1</sup> On January 16<sup>th</sup>, 2017, the name of Survey Services International Inc. was changed to “Cascade Petroleum Inc.”



In addition, in March 2015, NXT registered NXT Energy Solutions Inc. (Sucursal Bolivia) as a wholly owned “Branch” entity under the laws of the Plurinational State of Bolivia, to contract and conduct survey operations in Bolivia. Operations have now ceased in Bolivia and we closed the branch in 2021.

#### **D. Property, plant and equipment.**

##### Facilities / Office Premises

NXT leases 7,300 square feet of office premises at 3320 – 17th Avenue SW in Calgary, Alberta, Canada. The lease expires in September 2030.

##### Aircraft

In order to perform our survey services, NXT requires to fly the survey area in a jet aircraft. On March 22, 2024 the Company extended its aircraft lease for three years, until March 28, 2027. The aircraft lease was converted to a capital lease and the Company will own the aircraft at the end of the lease. Terms of the extension include a principal of US\$1,210,000, an interest rate of 12%, and monthly payments of US\$40,189. The Company has an early purchase option to acquire the aircraft on any of the following date, March 28, 2025, September 28, 2025, March 28, 2026 or September 28, 2026.

##### Equipment

Our SFD<sup>®</sup> technology is comprised of three main components, as detailed in the first three items below, which we collectively refer to as our SFD<sup>®</sup> survey system. This system is generally stored at our Calgary office facility unless deployed during survey operations when this equipment would travel with the aircraft or be stored in a locked facility at the survey location when not in use. In addition, there is extensive interpretation equipment located in Calgary. The main categories of equipment we use are:

- *Stress Field Detector* – The stress field detector, or SFD<sup>®</sup> system, including a unit which houses the SFD<sup>®</sup> sensors, is the principal component of our technology. The SFD<sup>®</sup> sensors respond to fine-scale perturbations in the gravitational field caused by changes in subsurface density and stress distribution. These responses are transformed through electromechanical transduction into electronic digital signals as the output. The SFD<sup>®</sup> method has proven highly effective at identifying potential hydrocarbon traps in a wide variety of geological settings onshore and offshore. Airborne SFD<sup>®</sup> surveys are currently conducted utilizing an array of 34 SFD<sup>®</sup> sensors, consisting of six primary, eight secondary, sixteen R&D sensors and four spare sensors, allowing multiple independent SFD<sup>®</sup> signals to be acquired at all points of a designed survey.
- *SFD<sup>®</sup> Signal Conditioning Unit* – This self-contained unit contains electronic circuits for powering the sensors and for stabilizing and conditioning electronic signals. All sensor output is directly connected to this unit and after signal conditioning is completed, all output is forwarded to the computer system.
- *Data Acquisition System* – This is used in conjunction with the SFD<sup>®</sup> sensor array on surveys. Our data acquisition system is a compact, portable computer system which concurrently acquires the electronic digital signals from the SFD<sup>®</sup> sensor array and other pertinent client data, including the GPS location information of the data.
- *Interpretation Theatre* – Once returned to our home base, the SFD<sup>®</sup> data collected is processed and converted into a format that can be used by our interpretation staff using systems consisting of generally off-the-shelf computer equipment, high-definition monitors, projectors and screens. This equipment is generally permanently set up at our Calgary office facility. A remote SFD<sup>®</sup> data interpretation theater is available and may be deployed during survey operations and would be set up in a facility at the survey client's city.

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## Oil and Gas Properties

We have minor historical interests in a limited number of acreage holdings of undeveloped lands in western Canada. These assets are not a material asset and have been written off in our financial statements. We are not affected by any significant environmental concerns, nor is there any planned significant capital additions contemplated. We have accrued approximately \$24,761 for asset retirement obligations related to the minor non-operating interest in these oil and gas wells in which NXT has outstanding abandonment and reclamation obligations in accordance with government regulations. The estimated future abandonment liability is based on estimates of the future timing and costs to abandon, remediate and reclaim the well sites within the next five years.

### ITEM 4A. UNRESOLVED STAFF COMMENTS

Not applicable.

### ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

The following discussion of our financial condition and results of operations should be read in conjunction with the accompanying consolidated Financial Statements and the notes to those statements incorporated by reference elsewhere in this Form 20-F. The following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed below and elsewhere in this annual report, particularly under the caption “Risk Factors”.

#### A. Operating results.

Overall Operational Performance

Selected Annual Information	For the year ended December 31,		
	2024	2023	2022
SFD <sup>®</sup> related revenue	\$ 644,294	\$ 2,145,716	\$ -
Net loss and comprehensive loss	(9,077,795)	(5,451,112)	(3,123,799)
Net loss per common share - basic	\$ (0.12)	\$ (0.07)	\$ (0.10)
Net loss per common share - diluted	\$ (0.12)	\$ (0.07)	\$ (0.10)
Net increase (decrease) in cash	328,682	138,276	(1,994,418)
Cash and short-term investments	730,395	401,713	263,437
Total assets	14,026,301	15,184,760	15,575,295
Lease liabilities	2,301,542	595,517	1,246,723
Long-term liabilities	712,963	824,074	935,185
Convertible debentures	9,174,957	3,355,989	-

Summary financial highlights for the last three fiscal years are as follows:

#### Financial Highlights for 2024

- On September 24, 2024 the Company announced that it entered into a contract with its Strategic Alliance Partner, Synergy E&P Technologies Limited (“Synergy”) to provide a repeat SFD<sup>®</sup> survey in Africa for an oil and gas exploration company. The Company mobilized for this SFD<sup>®</sup> survey on December 30, 2024. In January 2025, NXT completed SFD<sup>®</sup> data acquisition over 14 flight days for the SFD<sup>®</sup> survey in Africa. NXT’s interpretation and recommendations are expected to be delivered during the second quarter of 2025;

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- NXT announced its upcoming Southeast Asia SFD<sup>®</sup> Survey is planned to be flown in May 2025;
- NXT was awarded an SFD<sup>®</sup> survey in Pakistan, by AL-Haj Enterprises Private Limited, in the Northern Suleiman Fold Belt, to commence in Q4-25;
- On August 21, 2024 the Company entered into a contract to provide a geothermal SFD<sup>®</sup> survey to Alberta Geothermal Resource Recovery Inc;
- NXT completed the Turkish SFD<sup>®</sup> Survey, delivered the final results thereof to its Turkish customers and completed the integration of SFD<sup>®</sup> data with existing geological and geophysical data;
- NXT's SFD<sup>®</sup> awarded *Best Exploration Technology* at the 2024 Gulf Energy Information Excellence Awards;
- NXT was named a finalist for the *Energy Transition Award - Upstream* category at the 2024 Annual Platts Global Energy Awards;
- the debentures issued to MCAPM, LP were finalized for a total of US\$2.0 million (approximately CDN\$2.7 million);
- the Company received US\$900,000 (approximately CDN\$1,227,291) for convertible debentures from Ataraxia Capital, an affiliate of Synergy ("Ataraxia") under the same terms as the subscription agreement signed between Ataraxia and NXT in 2023, except for the conversion price of US\$0.24 per common share versus US\$0.143 in 2023;
- NXT and HULoolQ LTD., an Abu Dhabi based startup focused on "deep tech" disruptive technologies, entered into a sales agency agreement covering the United Arab Emirates;
- On March 22, 2024 the Company extended its lease on its aircraft for an additional three years as a capital lease. Under the terms of the lease, the Company will own the aircraft at the end of the term;
- NXT surrendered approximately 3,207 square feet, or approximately 31% of its current office space to its landlord, and extended its lease on the reduced office space until September 30, 2030;
- cash and short-term investments at December 31, 2024 was approximately \$0.73 million;
- net working capital was approximately (\$6.68) million at December 31, 2024 versus approximately (\$1.86) million at December 31, 2023;
- the Company recorded SFD<sup>®</sup>-related revenues of approximately \$0.64 million 2024 versus \$2.15 million for 2023;
- a net loss of \$9.08 million was recorded for 2024, including stock-based compensation expense ("SBCE"), amortization expense and remeasurement loss, all totaling approximately \$2.45 million;
- net loss per common share for 2024 was \$0.12 per share (basic) and \$0.12 per share (diluted);
- cash flow used in operating activities was approximately \$3.97 million during 2024, compared to \$4.83 million used in 2023; and
- general and administrative expenses ("G&A") increased by approximately \$0.63 million (16%) in 2024 as compared to 2023.

## Financial Highlights for 2023

- the Company commenced the Turkish SFD<sup>®</sup> Survey for an independent oil and gas exploration company in Türkiye.
- the first two tranches of the November Debentures were received for a total of US\$1.15 million (CDN\$1.58 million) of cash;
- ten-year strategic partnership in Africa with Synergy as described below;
- The 2023 Ataraxia Debenture contributed \$1.90 million of cash as defined and described below;
- in June, the appointment of Interim Chief Executive Officer ("CEO"), Mr. Bruce G. Wilcox;
- Private Placement (defined below) contributed \$1.62 million of cash;
- In Q1-23 the Company announced the grant of 2,050,000 incentive stock options at a price of \$0.216 to employees, officers and directors. These incentive stock options will vest upon receipt of cash for SFD<sup>®</sup> services performed: 1/3 upon collection of US\$6.5 million, 1/3 upon the collection of the next US\$7.0 million and the final 1/3 upon collection of an additional US\$7.5 million;

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- cash at December 31, 2023 was approximately \$0.40 million;
- net working capital was approximately (\$1.86) million at December 31, 2023;
- the Company recorded SFD<sup>®</sup>-related revenues of approximately \$2.15 million;
- a net loss of approximately \$5.45 million was recorded for 2023, including Stock Based Compensation Expense (“SBCE”) and amortization expense of approximately \$1.97 million;
- net loss per common share for 2023 was \$0.07 per share (basic) and \$0.07 per share (diluted);
- cash flow used in operating activities was approximately \$4.83 million in the 2023 financial year; and
- general and G&A expenses decreased by approximately \$0.32 million (8%) in 2023 as compared to 2022.

## Financial Highlights for 2022

- cash at December 31, 2022 was \$0.26 million;
- net working capital was \$(1.681) million at December 31, 2022;
- the Company recorded SFD<sup>®</sup>-related revenues of \$nil;
- a net loss of \$6.73 million was recorded for 2022, including SBCE and amortization expense of \$1.98 million;
- net loss per common share for 2022 was \$0.10 basic and \$0.10 diluted;
- cash flow used in operating activities was \$2.93 million during 2022;
- G&A increased by \$0.55 million (17%) in 2022 as compared to 2021; and
- the Rights Offering and Private Placement (both defined herein) contributed \$0.43 million of cash.

## **Consolidated Statements of Net Loss**

	2024	2023	2022
SFD <sup>®</sup> related revenue	\$ 644,294	\$ 2,145,716	\$ -
SFD <sup>®</sup> related costs	2,021,768	2,249,126	1,178,183
General and administrative	4,045,778	3,420,143	3,736,431
Amortization expense	1,887,013	1,759,473	1,768,727
	7,954,559	7,428,742	6,683,341
Other expense, net	1,767,530	168,086	49,735
Loss before income taxes	(9,077,795)	(5,451,112)	(6,733,076)
Income tax expense	-	-	-
Net loss for the year	(9,077,795)	(5,451,112)	(6,733,076)

## Revenue and expenses for the years ended December 31, 2024, 2023 and 2022

SFD<sup>®</sup> related revenues –In 2024 and 2023 the Company recorded revenues from Turkish SFD<sup>®</sup> surveys. No revenue was recorded in 2022.

SFD<sup>®</sup> related costs – SFD<sup>®</sup> related costs include aircraft charter costs (net of charter hire reimbursements), lease expenses and aircraft operation and maintenance costs.

In 2024, 2023 and 2022, the Company incurred aircraft operation costs for aircraft handling and maintenance costs. In 2024 and 2023 additional costs were incurred for SFD<sup>®</sup> survey operations. During 2024, aircraft operations were \$647,939 (approximately 74%) higher as pilot training and required maintenance were performed before the mobilization of upcoming SFD<sup>®</sup> Surveys. Survey projects were \$602,521 lower due to costs incurred to perform the Turkish SFD<sup>®</sup> Survey in Q4-23. Aircraft lease costs were approximately 75% lower due to the conversion of the lease from an operation lease to a finance lease.

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In 2023 the Company incurred increased SFD<sup>®</sup> related costs due to the Turkish SFD<sup>®</sup> survey. Aircraft operations were higher in 2022 due to the timing of routine major preventive maintenance costs in Q1-22 and preparing the aircraft for up to 300 hours of flight hours to conduct SFD<sup>®</sup> surveys, but overall survey project costs were \$118,441 lower due to the costs incurred for the Pre-existing Data Sale in 2021.

**G&A** - G&A is a major component of NXT's total expenses. The categories included in G&A are as follows:

<b>G&amp;A</b>	<b>2024</b>	<b>For the year ended December 31,</b>	
		<b>2023</b>	<b>2022</b>
Salaries, benefits, and consulting charges	\$ 1,791,482	\$ 1,512,150	\$ 1,688,262
Board, professional fees, and public company costs	899,797	753,468	818,087
Premises and administrative overhead	782,218	822,019	818,987
Business development	303,546	91,235	195,811
Total G&A before Stock based compensation	3,777,043	3,178,872	3,521,147
Stock based compensation	268,735	241,271	215,284
Total G&A	4,045,778	3,420,143	3,736,431

G&A increased \$282,667 or 36%, in 2024 compared to 2023 for the following reasons:

- salaries, benefits, and consulting charges increased \$38,192 or approximately 11%, due to commissions and retainers for SFD<sup>®</sup>-related revenue;
- Board and professional fees and public company costs increased \$117,933 or approximately 76%, due to professional fees related to the convertible debentures;
- premises and administrative overhead costs decreased \$12,630 or approximately 6% due to the approximately 31% space reduction as of May 1, 2024. Please see the section “*Contractual Obligations – Leases*”. This was offset by additional SFD<sup>®</sup> survey software expenditures as the Company prepares for its SFD<sup>®</sup> surveys;
- business development costs increased \$104,895 or approximately 906% due to increased travel related to finalizing upcoming SFD<sup>®</sup> survey contracts. In Q4-23 there was minimal travel as staff time was focused on planning for the Turkish SFD<sup>®</sup> Survey; and
- SBCE's were lower in Q4-24 versus Q4-23 by \$34,287 or approximately 54%, because the Company began to recognize expense related to the Company's Performance Options. Please see the next section “*Discussion of Operations – Stock-based Compensation*” for further information on the SBCE.

G&A expenses decreased \$316,288, or 8%, in 2023 compared to 2022 for the following reasons:

- salaries, benefits, and consulting charges decreased \$176,112 or 10%, as the Company had one less headcount for the first half of 2023 and the new CEO's compensation was less than the CEO compensation paid in 2022. In addition, a portion of some salaries was allocated to direct labour expense to support the Turkish SFD<sup>®</sup> Survey;
- board and professional fees and public company costs decreased \$64,619, or 8%. More director fees were reimbursed in options in 2023 versus 2022 and audit fees were lower due to the Company changing its auditor. This was offset by increased professional fees due to the 2023 Ataraxia Debentures and November Debenture financing;
- premises and administrative overhead costs increased \$3,032, or 0%, due to spending for SFD<sup>®</sup> survey planning and related software upgrades. This was partially offset as the Company surrendered office space at the end of Q1-22 which lowered rent costs;
- business development costs decreased \$104,576 or 53% due to less travel expenses during 2023 versus 2022. The Company engaged in more travel to the middle east and Asia to pursue opportunities during 2022, while in 2023 the Company focused on the Turkish SFD<sup>®</sup> Survey and attended more virtual meetings; and
- SBCE's were higher in 2023 as opposed to 2022 by \$25,987 or 12%. Stock Option expense was higher as options were granted in lieu of cash payments to certain directors. While the Company has engaged a marketing consultant, such consultant is intended to be paid in shares and not cash. This was offset by the Company's restricted stock unit (“RSU”) expense being lower in 2023, as the Company's share price at the vesting date of September 20, 2023 was lower than the share price at the 2022 vesting date. Please see the next section Stock-based Compensation Expenses for further information on the SBCE.

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Stock-based compensation

SBCE varies in any given year as it is a function of several factors including the number of units of each type of stock-based compensation plan issued in the period and the amortization term (based on the term of the contract and/or number of years for full vesting of the units, which is normally three years) of the resultant expense. Also, SBCE is a function of periodic changes in the inputs used in the Black-Scholes option valuation model, such as volatility in NXT's trailing share price and for cash-settled stock-based compensation awards variability will occur based on changes to observable prices. Stock options granted generally expire, if unexercised, five years from the date granted and entitlement to exercise them generally vests at a rate of one-third at the end of each of the first three years following the date of grant. On January 6, 2023 the Company granted 2,050,000 incentive stock options at a strike price of \$0.216 to employees, officers and directors (the "2023 Options"). The 2023 Options will vest upon the occurrence of several milestones relating to the cash received for SFD<sup>®</sup> services performed: (i) one-third of the 2023 Options will vest upon the collection of US\$6.5 million for SFD<sup>®</sup> services performed; (ii) one-third of the 2023 Options will vest upon the collection of the next US\$7.0 million for SFD<sup>®</sup> services performed; and (iii) the final one-third of the 2023 Options will vest upon collection of an additional US\$7.5 million for SFD<sup>®</sup> services performed. In Q2-24 the Company determined that reaching the first vesting milestone of collecting US\$6.5 million for the 2023 Options is probable. In Q4-24 the Company also determined that reaching the second vesting milestone of collecting an additional US\$7.0 million was probable. Therefore, NXT began to recognize the stock option expense related to the 2023 Options first vesting level in Q2-24 and the second vesting level in Q4-24. On February 24, 2025 the Company granted 1,400,000 incentive stock options at a strike price of \$0.203 to directors of the Company (the "2025 Options"). The 2025 Options will vest upon the achieving of a trailing twelve-month free cash flow per share of \$0.10.

The deferred share unit ("DSUs") plan (the "DSU Plan") is a long-term incentive plan that permits the grant of DSUs to qualified directors. DSUs granted under the DSU Plan are to be settled at the retirement, resignation or death of the Board member holding the DSUs. RSUs entitle the holder to receive, at the option of the Company, either the underlying number of shares of the Company's common stock upon vesting of such units or a cash payment equal to the value of the underlying shares. The RSUs vest at a rate of one-third at the end of each of the first three years following the date of grant. In the year ended December 31, 2020, the Company granted 1,200,000 RSUs to employees and officers and an additional 1,875,000 RSUs on February 24, 2025. In 2023 and 2022, the Company settled the RSU vesting with shares and cash. The ESP Plan allows employees and other individuals determined by the Board to be eligible to contribute a minimum of 1% and a maximum of 10% of their earnings to the plan for the purchase of Common Shares in the capital of the Company, of which the Company will make an equal contribution. Common Shares contributed by the Company may be issued from treasury or acquired through the facilities of the TSX. During 2024, 2023 and 2022 the Company has elected to issue Common Shares from treasury.

SBCE in 2024 was higher compared to 2023 by \$27,463 or approximately 11%. The Company began to recognize expense for the first two milestones of the 2023 Options in 2024. Stock option expense in 2023 was for director fees reimbursed via stock options. In addition, \$15,000 of director fees were reimbursed by DSUs during Q4-24, but there were zero DSUs issued in Q4-23. The ESP Plan expense increased as employee participation in the plan increased in 2024 versus 2023. The RSU expense decreased year over year as the 2024 RSU grant versus the 2023 RSU grant accrued a lower cost due to the lower share price and less units in the 2024 grant versus the previous 2020 RSU grant which had its final vesting period in 2023.

SBCE in 2023 was higher compared to 2022 by \$25,987 or 12% due to the compensation owed to the marketing consultant and that options were granted in lieu of cash payments to certain directors. The RSU expense was lower as the Company's share price at the vesting date of September 20, 2023 was lower versus the share price at September 30, 2022 and the 2022 vesting date and there were no RSUs in Q4-23. In addition, there was lower ESP Plan participation during 2023 due to two less participants.

On October 1, 2023 the Company entered into a service agreement with a marketing consultant to provide sales and market services to introduce potential customers to the SFD<sup>®</sup> technology, attend trade shows, and update the Company's market systems. The consultant agreed to be compensated in common shares only for approximately US\$16,000 per month, based on the five-day volume average price at the end of each month until February 29, 2024. On December 31, 2024, a total of 634,439 common shares were due to the marketing consultant (360,139 common shares at December 31, 2023). On January 29, 2025, 634,439 common shares were issued to the marketing consultant.

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**Stock-based compensation expense**

	For the year ended December 31,		
	2024	2023	2022
Stock Option Expense	\$ 118,849	\$ 92,500	\$ 22,551
Deferred Share Units	15,000	-	-
Restricted Stock Units	40,632	62,441	153,343
Employee Share Purchase Plan	41,619	30,508	39,390
Consultant Compensation	52,634	55,822	-
Total SBCE Expenses	268,734	241,271	215,284

**Amortization Expense**

Property and equipment and Intellectual property is recorded at cost, less accumulated amortization, which is recorded over the estimated service lives of the assets using annual rates and methods which are also subject to ongoing tests of potential impairment of the recorded net book value.

**Amortization Expense**

	For the year ended December 31,		
	2024	2023	2022
Property and equipment	\$ 188,499	\$ 60,959	\$ 70,213
Intellectual property	1,698,514	1,698,514	1,698,514
Total Amortization Expense	1,887,013	1,759,473	1,768,727

Property and equipment and related amortization expense. Property and equipment depreciation was higher in 2024 versus 2023 as the Company converted its aircraft lease to a finance lease, and as a result, began to record the amortization of the aircraft as a depreciating expense over the estimated remaining useful life of the aircraft. Property and equipment amortization was lower in 2023 compared to 2022 due to additional assets becoming fully amortized during the period and the Company not acquiring significant new assets in the periods. Amortization also decreases each year as the Company uses the declining balance method of amortization, thereby having the effect of lowering amortization each year on existing assets.

IP and related amortization expense. NXT acquired specific rights to utilize the proprietary SFD<sup>®</sup> technology in global hydrocarbon exploration applications from the inventor of the SFD<sup>®</sup> technology, NXT's former Chairman, President and Chief Executive Officer, on August 31, 2015. The value attributed to the acquired IP assets was \$25.3 million. The IP assets are amortized on a straight-line basis over a 15-year period (future amortization expense of \$1,685,000 per year) and are also being subject to an ongoing assessment of potential indicators of impairment of the recorded net book value.

As discussed in Item 4.B., the Company acquired the SFD<sup>®</sup> technology for the Geothermal Right from NXT's Chairman, President and Chief Executive Officer on April 18, 2021. The Geothermal Right is being amortized on a straight-line basis over its estimated useful life of 20 years. The annual amortization expense expected to be recognized is approximately \$13,781 per year for a five-year aggregate total of \$68,902.

No impairments were recognized in 2024, 2023, or 2022.

**Other Expense (Income)**

	For the year ended December 31,		
	2024	2023	2022
Interest expense , net	\$ 750,611	\$ 160,262	\$ 36,220
Foreign exchange loss (gain)	574,106	(8,028)	(15,340)
Intellectual property and other	10,824	15,852	16,933
Loss of fair value remeasurement	296,534	-	-
Loss on disposal of assets & lease modifications	135,455	-	11,922
Total Other Expense (Income)	1,767,530	168,086	49,735

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**Interest expense, net.** This category of other expenses includes interest income earned on short-term investments net of interest expense from the convertible debentures, and long-term debt. Interest expense increased in 2024 versus 2023, due to the Company issuing the Debentures during 2023 and 2024.

Interest expense increased in 2023 versus 2022 due to less short-term investments during 2023 and the Company issuing the two debentures in.

**Foreign exchange loss (gain).** This category of other expenses includes losses and gains caused by changes in the relative currency exchange values of US\$ and CDN\$. The Company held net US\$ liability at December 31, 2024, 2023 and 2022, including accounts receivable, cash and cash equivalents, short-term investments, US\$ lease obligations, convertible debentures and the security deposit for the aircraft, all of which have an effect on the unrealized foreign exchange gain and loss. For 2024 the exchange loss was the result of (i) the 8.7% weaker CDN\$ to US\$ between December 31, 2024 and December 31, 2023 and (ii) the Company having a net liability of US\$7,130,144. For 2023, the exchange gain was the result of (i) the 2.4% stronger CDN\$ to US\$ rate between December 31, 2022 and December 31, 2023 and (ii) the Company having a net liability of US\$1,179,649. At December 31, 2022, the CDN\$ to US\$ exchange rate was 6.3% lower as compared to the CDN\$ to US\$ exchange rate at December 31, 2021 and the Company had a net US\$ asset for most of the year, resulting in the corresponding foreign exchange gain for 2022.

The Company does not currently enter into hedging contracts, but does however use alternative strategies to reduce the volatility of US dollar assets including converting excess US dollars to CDN dollars.

**Intellectual property and other.** In 2024, 2023 and 2021, the Company's IP and other expenses were associated with periodic patent maintenance and renewal fees required during these time periods.

We currently have no outstanding derivative financial instruments, such as foreign currency hedges.

**Loss on fair value remeasurement.** The Company recognized a loss of \$296,534 in the 2024 financial year on the fair value remeasurement of the November Debentures and 2024 Debentures (each as defined herein) due to changes in the US\$/CDN\$ exchange rates and the Company's share price.

**Loss on disposal of assets & lease modifications.** During Q2-24, the Company reduced its office space by approximately 31% and extended its office lease until September 2030. In Q1-24, the Company extended its aircraft lease for three years, until March 28, 2027. As a result of the office space reduction and the extensions of the aircraft and office leases, the Company recognized the following losses during 2024:

Asset/Lease (Figures are given in "\$")

Aircraft lease extension	31,686
Office lease extension	1,214
Write-off of leasehold improvements	101,006
Write-off of office furniture and equipment	1,549
<b>Total</b>	<b>135,455</b>

In Q1-22, the Company surrendered 826 square feet of office space. As a result of the space surrender, the Company recorded a loss on disposal of leasehold improvement assets and lease modifications.

**Income tax expense** – There was no income tax expense in 2024, 2023 or 2022.

At the end of 2024, NXT has available for future Canadian income tax deduction purposes significant unrecorded deferred income tax assets, the benefit of which has not been recorded in the Company's financial statements due to uncertainty regarding the amount and timing of their potential future utilization. These deferred income tax assets include non-capital losses carried-forward (expiring in 2027 to 2044) and other resource deductions totaling approximately \$13.8 million.

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## Summary of Quarterly Results (Unaudited)

A summary of operating results for each of the trailing 8 quarters (including a comparison to each respective prior quarter) follows. The extent of the profit or loss each quarter is mainly due to the timing and the number of survey contracts that are underway, and variances in such non-cash items as SBCE, which can occasionally be a significant expense in any given quarter

	Q4-24 Dec 31, 2024	Q3-24 Sep 30, 2024	Q2-24 Jun 30, 2024	Q1-24 Mar 31, 2024
SFD <sup>®</sup> related revenue	\$ 42,222	\$ -	\$ -	\$ 602,072
Net income loss	(2,800,582)	(1,477,400)	(3,013,213)	(1,786,600)
Loss per share - basic	(0.04)	(0.02)	(0.04)	(0.02)
Loss per share – diluted	(0.04)	(0.02)	(0.04)	(0.02)

  

	Q4-23 Dec 31, 2023	Q3-23 Sep 30, 2023	Q2-23 Jun 30, 2023	Q1-23 Mar 31, 2023
SFD <sup>®</sup> related revenue	\$ 2,145,716	\$ -	\$ -	\$ -
Net loss	(425,701)	(1,703,956)	(1,706,809)	(1,614,647)
Loss per share - basic	(0.01)	(0.02)	(0.02)	(0.02)
Loss per share – diluted	(0.01)	(0.02)	(0.02)	(0.02)

### Significant or Unusual Items Impacting Net Loss:

During Q4-24, the Company's net loss increased due to unrealized foreign exchange losses due to the weakening CDN\$ and interest increases due to the issuance of the 2024 Ataraxia Debenture. In Q3-24, the Company incurred additional G&A costs in anticipation of increased commercial activity, recognized a gain for the fair value remeasurement of the convertible debentures, and unrealized foreign exchange loss (gain) improved due to a strengthening CDN\$. In Q2-24, the Company wrote off leasehold improvements due to the 31% office space reduction, recognized a loss for the fair value remeasurement of the convertible debentures, related increased interest expense, and unrealized foreign exchange loss increased due to the net US\$ liabilities held by the Company. In Q1-24, SFD<sup>®</sup> related-revenues were from the Turkish SFD<sup>®</sup> Survey. Net loss reflected higher SFD<sup>®</sup>-related costs, net due to the Turkish SFD<sup>®</sup> Survey an additional headcount, sales commissions and higher business development travel costs as well as interest expense due to the Debentures issued during 2023 and 2024 financial years. In Q4-23, the Company earned SFD<sup>®</sup>-related revenue and incurred SFD<sup>®</sup>-related costs due to the Turkish SFD<sup>®</sup> Survey, which reduced its net loss versus the previous six quarters. During Q3-23, the Company decreased G&A spending due to less professional fees as there was minimal incremental financing during the quarter. This was offset by costs incurred to plan for the upcoming Turkish SFD<sup>®</sup> Survey and foreign exchange losses due to the weakening CDN\$. In Q2-23, the Company incurred G&A costs due to increased business development activity and professional fees related to the Ataraxia Debentures. In Q1-23, the Company incurred lower SFD<sup>®</sup>-related costs as there was no unplanned maintenance on the aircraft, and lower G&A as the Company reduced its headcount by one. In each quarter between Q1-23 and Q4-24, the Company incurred net losses due to incurred SFD<sup>®</sup>-related costs related to aircraft lease and aircraft maintenance costs, G&A expenses, and non-cash items such as SBCE, which can be a significant expense in any given quarter. More details are provided below:

- In Q4-24, the Company incurred additional interest costs due to the addition of the 2024 Ataraxia Debentures and the 6.5% weakening of the CDN\$ during the quarter with the 2024 Ataraxia Debentures increasing the net US\$ liability. The Company also recognized a gain for the fair value remeasurement of the 2024 Debentures and the November Debentures;
- in Q3-24, the Company incurred additional G&A costs in anticipation of increased commercial activity, recognized a gain for the fair value remeasurement of the convertible debentures, and unrealized foreign exchange loss (gain) improved due to a strengthening CDN\$;
- in Q2-24, the Company wrote off leasehold improvements due to the 31% office space reduction, interest expense increased and fair value remeasurement due to the addition of the 2024 Debentures, and with the strengthening US\$ versus the CDN\$ unrealized foreign exchange loss increased due to the net US\$ liabilities;

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- in Q1-24, SFD<sup>®</sup>-related revenue and SFD<sup>®</sup>-related costs increased due to the Turkish SFD<sup>®</sup> Survey. G&A increased due to an additional headcount and business development costs. Interest expense increased due to the issuance of the November Debentures;
- in Q4-23, SFD<sup>®</sup>-related revenue and SFD<sup>®</sup>-related costs increased due to the Turkish SFD<sup>®</sup> Survey and therefore reduced the Q4-23 loss versus the previous seven quarters. Interest expense increased due to the issuance of the November Debentures;
- in Q3-23, costs decreased as G&A spending due to less professional fees, offset by costs incurred to plan for the Turkish SFD<sup>®</sup> Survey and increased foreign exchange losses due to the weakening CDN\$;
- in Q2-23, costs increased primarily due to higher professional fees and business development activity; and
- in Q1-23, costs were reduced primarily due to lower headcount and maintenance costs.

### ***Strategic Investment***

On May 24, 2023 the Company entered into a ten-year strategic alliance and associated financing with Synergy which grants Synergy an exclusive license to use, distribute, sub-license, market and sell NXT's SFD<sup>®</sup> solutions in Africa. In addition, on September 30, 2023, NXT extended the exclusive license to include Ataraxia, an affiliate of Synergy.

PE Energy Limited, an affiliate of Synergy and Ataraxia, has performed several commercial projects with NXT in Africa in the past, in addition to the African SFD<sup>®</sup> Survey.

Synergy and Ataraxia, with this arrangement, will be advancing the SFD<sup>®</sup> technology to address energy security and transition in the African continent for both oil and gas and geothermal sources. Synergy, Ataraxia and NXT have and will continue to work closely together to train local technical teams and regulatory authorities on the patented SFD<sup>®</sup> technology. The local content is a commercial advantage for NXT and has shown early signs of increasing our operational efficiency.

Building upon a record of successful collaborations underpinned by the continued market demand in Africa, in 2023 Ataraxia executed a subscription agreement pursuant to which Ataraxia agreed to subscribe for an aggregate of US\$2.3 million convertible debentures (collectively, the "Ataraxia Debentures"), with a subscription price to be advanced in instalments, of which it completed US\$1.4 million during Q3-23. In November 2024 Ataraxia funded the remaining balance of US\$900,000. Please see ITEM 5B "Ataraxia Debentures" for further information on the Ataraxia Debentures.

### **B. Liquidity and capital resources.**

#### ***Going Concern***

The audited consolidated financial statements for 2024 have been prepared on a going concern basis. The going concern basis of presentation assumes that NXT will continue in operation for the foreseeable future and will be able to realize its assets and discharge its liabilities and commitments in the normal course of business.

The events described in the following paragraphs highlight that there continues to be material uncertainties that cast substantial doubt about NXT's ability to continue as a going concern within one year after the date that the audited consolidated financial statements have been issued. The Company's current cash position is not expected to be sufficient to meet the Company's obligations and planned operations for a year beyond the date that the audited consolidated financial statements have been issued.

During 2024, the Company completed an SFD<sup>®</sup> survey and has received deposits payments on three other SFD<sup>®</sup> surveys planned to be executed in 2025 (the "2025 SFD<sup>®</sup> Surveys"). As of the date of this 20-F, the Company has finished the acquisition phase of one of the 2025 SFD<sup>®</sup> Surveys and received milestone payments which has generated cash from operations for the Company. In addition, during 2023 and 2024 the Company completed private placements which resulted in raising an additional net proceeds of \$9,757,366.

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The Company continues to develop its pipeline of opportunities to secure additional revenue contracts. The Company's longer-term success remains dependent upon its ability to convert these revenue opportunities into successful contracts, to continue to attract new client projects, expand its revenue base to a level sufficient to exceed fixed operating costs, and generate consistent positive cash flow from operations. The occurrence and timing of these events cannot be predicted with certainty.

Further financing options that may or may not be available to the Company include issuance of new equity, debentures or bank credit facilities. The need for any of these options will be dependent on the timing of securing additional SFD<sup>®</sup> related revenues and obtaining financing on terms that are acceptable to both the Company and the financier.

The consolidated financial statements do not reflect adjustments that would be necessary if the going concern basis was not appropriate. If the going concern basis was not appropriate for these consolidated financial statements, then adjustments would be necessary in the carrying value of the assets and liabilities, the reported revenues and expenses, and the balance sheet classifications used. These adjustments could be material.

NXT's cash and cash equivalents and short-term deposits as at December 31, 2024 totaled \$0.73 million. Net working capital totaled \$(6.68) million. See the information in the section "*Liquidity and Capital Resources – Net Working Capital*" for further information.

Risks related to having sufficient ongoing net working capital to execute survey project contracts are mitigated through NXT's normal practice of obtaining advance payments and progress payments from customers throughout the course of projects, which often span three to four months. In addition, where possible, risk of default on client billings are mitigated through the use of export insurance programs offered by Export Development Canada.

The Company does not have provisions in its leases, contracts, or other arrangements that would trigger additional funding requirements or early payments except if the Company were to default on its office lease, where the current month's rent plus the next three months would become immediately due. If the Company were to default on the aircraft lease, the Company would be required to deliver the aircraft back to the lessor.

The Ataraxia Debentures are for a term of two years, payable on demand. The Ataraxia Debentures are secured by a general security agreement, subordinate to the long-term debt. See ITEM 5B "*Ataraxia Debentures*" for more information.

### **Debentures**

#### ***Repayment of principal and interest as of December 31, 2024***

	<b>US\$</b>	<b>CDN\$<sup>1</sup></b>
2025	3,102,200	4,462,515
2026	3,830,050	5,509,527
Total principal and interest payments	6,932,250	9,972,042
Less interest	(760,250)	(1,093,619)
Principal remaining	6,172,000	8,878,423
Change in fair value of convertible debentures	206,141	296,534
Net principal remaining	6,378,141	9,174,957
Current portion of convertible debentures	3,416,926	4,915,248
Non-current portion of convertible debentures	2,961,215	4,259,709

1. US\$ payments have been converted to CDN\$ at a rate of 1.4385.

### **2024 Debentures**

On May 31, 2024, the Company issued convertible debentures (the "2024 Debentures") to MCAPM LP for the principal amount of US\$2,000,000 (approximately CDN\$2,773,660). The 2024 Debentures bear interest at 10.0% per annum, paid quarterly in arrears, and are due and payable on May 31, 2026. The 2024 Debentures are convertible into common shares at a conversion price of US\$0.25 (approximately CDN\$0.3428) per common share, which provides MCAPM LP with the right to obtain up to 8,000,000 common shares of the Company.

The proceeds from the Debenture were used to support the working capital needs of SFD<sup>®</sup> surveys and other G&A costs, which include business development and marketing activities required to transform the existing pipeline of SFD<sup>®</sup> opportunities into firm contracts.

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## November Debentures

On November 8, 2023, the Company issued the first tranche of a multi-tranche unsecured convertible debenture (the "November Debentures"). The November Debentures bear interest at 10.0% per annum, paid quarterly in arrears, and are due and payable two years after issuance of the November Debentures. The November Debentures are convertible into common shares in the capital of NXT at a fixed conversion price of US\$0.1808 (CDN\$0.25). During 2023, the Company issued the first two tranches of the November Debentures for US\$1,150,000 (approximately CDN\$1,577,600).

On January 12, 2024, the Company closed the final tranche of the November Debentures for an additional US\$722,000 (approximately CDN\$966,036). Including the final tranche, the Company issued a total of US\$1,872,000 (approximately CAD\$2,543,636) of the November Debentures, which will allow the subscribers to obtain an aggregate of up to 10,353,982 common shares. Insiders, which include MCAPM LP, Michael P. Mork ("Mork Capital") and all of the directors of NXT, were issued November Debentures valued, in the aggregate principal amount, at US\$1,522,000 (approximately CDN\$2,076,776).

Mork Capital has the right to own, after conversion of all of its 2024 Debentures and November Debentures, 30,526,321 common shares. This represents approximately 32.5% of the issued and outstanding common shares of the Company as of the date of the financial statements (after giving effect to the conversion of the full amount of their 2024 Debentures and the November Debentures).

## Ataraxia Debentures

In May 2023, the Company signed a subscription agreement with Ataraxia in which Ataraxia would purchase US\$2,300,000 of convertible debentures. The terms of the convertible debentures issued to Ataraxia include an annual interest rate of 10% paid quarterly in arrears. The convertible debentures can also be converted into voting preferred shares with an annual dividend rate of 10% paid per quarter. The preferred shares are not transferable, but may be converted on a one-to-one basis into common shares. The convertible debentures are payable on demand two years after the issue date and are secured by a general security agreement, subordinate to the long-term debt.

On May 31, 2023, the Company issued a two-year term convertible debenture for US\$1,200,000 (approximately CDN\$1,631,954) to Ataraxia and an additional US\$200,000 (approximately CDN\$265,560) on July 10, 2023 (the "2023 Ataraxia Debentures"). The 2023 Ataraxia Debentures have a fixed conversion price of US\$0.143 per common share.

On November 4, 2024, the Company issued a two-year term convertible debenture for US\$500,000 (approximately CDN\$676,995) to Ataraxia and an additional US\$400,000 (approximately CDN\$550,296) on November 12, 2024 (the "2024 Ataraxia Debentures"). The 2024 Ataraxia Debentures have a fixed conversion price of US\$0.24 per common share. The proceeds from the 2024 Ataraxia Debentures have been used to support the working capital needs of the SFD<sup>®</sup> surveys in Africa.

Ataraxia has the right to own, after conversion of all of their 2023 Ataraxia Debentures and 2024 Ataraxia Debentures, 13,540,209 common shares. This represents approximately 14.6% of the issued and outstanding common shares as of the date of these financial statements (after giving effect to the conversion of the full amount of the 2023 Ataraxia Debentures and 2024 Ataraxia Debentures).

As of the date of this 20-F, no preferred or common shares have been issued pursuant to the conversion of the 2023 Ataraxia Debentures or the 2024 Ataraxia Debentures.

On May 31, 2023, the Company and Ataraxia entered into an Investor Rights Agreement (the "Investor Rights Agreement") pursuant to which Ataraxia has been granted the right: (i) to nominate one person for election or appointment as a director of the Company; (ii) to have one representative of Ataraxia attend the Company's Board meetings as an observer (except any portion of a Board meeting where the Company's relationship with Ataraxia is to be a subject of discussion); (iii) to purchase up to its pro rata portion (calculated on a fully diluted basis) of any securities offered by the Company, subject to certain limitations set forth in the Investor Rights Agreement; and (iv) receive certain information regarding the Company, including annual and quarterly financial statements, annual budgets, the capitalization tables, and access to its premises upon reasonable notification. In each case, Ataraxia will retain the rights set forth in the Investor Rights Agreement for so long as Ataraxia holds (i) any principal amount of the Ataraxia Debentures or (ii) common shares or preferred shares (as applicable), representing at least 5% of the outstanding common shares of the Company (on an as-converted basis, if Ataraxia holds Preferred Shares).

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Both the Ataraxia subscription agreement, and the Investor Rights Agreement, are publicly available under the Company's profile on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

### Private Placement

On December 22, 2022, the Company announced a multi-tranche private placement (the "Private Placement") at \$0.195 per share. On December 22, 2022, the Company issued 1,148,282 common shares for gross proceeds of \$223,915 in the first tranche, less issuance costs of \$7,732. On January 25, 2023, the Company closed the Private Placement by issuing an additional 8,510,000 common shares, at \$0.195 per common share, for additional aggregate gross proceeds of approximately \$1,659,450, less issuance costs of \$37,393. The proceeds from the Private Placement were used to support G&A, which include business development and marketing activities required to transform the pipeline of SFD® survey opportunities into firm contracts. Mork Capital purchased 8,750,000 common shares or \$1,706,250 of the Private Placement along with two members of the Board for a total of \$83,515.

### Rights Offering

On December 2, 2022, NXT closed the Rights Offering that had been announced on October 31, 2022. The Company issued 2,149,180 common shares a price of \$0.18 per common share, for aggregate gross proceeds of a \$386,852. Share issue costs of \$170,790 were recorded as a reduction to share capital.

The proceeds from Rights Offering were used for G&A expenses.

**Non-GAAP Measure:** This discussion includes references to the term "net working capital", which does not have a standardized meaning prescribed by U.S. GAAP and may not be comparable to similar measures presented by other entities. NXT management uses this non-GAAP measure to improve our ability to assess liquidity at a point in time. Net working capital is defined as total current assets less total current liabilities, excluding amounts accumulated in work in progress and deferred revenue. Management excludes these amounts from the calculation as they do not represent future cash inflows or outflows to the Company.

NXT had net working capital of \$(6,683,656) as at December 31, 2024 broken down as follows:

	<b>December 31, 2024</b>	December 31, 2023	Net change in 2024
Current assets (current liabilities):			
Cash and cash equivalents	\$ 730,395	\$ 401,713	\$ 328,682
Accounts receivable	105,858	1,828,523	(1,722,665)
Prepaid expenses and deposits	274,799	53,673	221,126
Accounts payable and accrued liabilities	(1,233,974)	(1,836,741)	602,767
Unearned revenue	(840,768)	-	(840,768)
Convertible debentures	(4,915,248)	(1,842,566)	(3,072,682)
Current portion of long-term debt	(111,111)	(111,111)	-
Current portion of lease obligation	(693,607)	(343,513)	(350,094)
<b>Total Net Working Capital</b>	<b>(6,683,656)</b>	<b>(1,850,022)</b>	<b>(4,833,634)</b>

Net working capital as at December 31, 2024 compared to December 31, 2023 decreased by \$4,833,634, or 261%. Funds were received from the 2024 Debentures, 2024 Ataraxia Debentures, accounts receivable payments on the Turkish SFD® Surveys and deposits on the other 2025 SFD® Surveys. These funds were used to settle accounts payable, accrued liabilities long-term debt, and lease obligations. Current lease obligations increased as the Company's building and aircraft leases were extended in 2024. In addition, most of the November Debentures are due within one year as of December 31, 2024.

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Long-term Debt (HASCAP Loan)

On May 26, 2021, the Company received \$1,000,000 from the BDC's HASCAP Loan. The HASCAP Loan is a \$1,000,000 non-revolving ten-year term credit facility with an interest rate of 4%. Repayment terms were interest only until May 26, 2022, and monthly principal plus interest payments for the remaining nine years. The HASCAP Loan is secured by a general security agreement and is guaranteed by BDC.

**Repayment of long-term debt principal and interest:**

2025	\$	137,593
2026		133,148
2027		128,704
2028		124,259
2029		119,815
2030 to 2031		162,129
<b>Total principal and interest payments</b>		<b>805,648</b>
Less interest		(92,685)
<b>Total principal remaining</b>		<b>712,963</b>
Current portion of long-term debt		111,111
Non-current portion of long-term debt		601,852

Sources and uses of cash

The overall net changes in cash balances in each of the years noted below is a function of several factors including any inflows (outflows) due to changes in net working capital balances and net of any cash transferred into/out of short-term investments. Further information on the net changes in cash, by each of the operating, financing, and investing activities, for the last three fiscal years is as follows:

For the year ended December 31	2024	2023	2022
Cash provided by (used in):			
Operating activities	\$ (3,969,591)	\$ (4,831,950)	\$ (2,934,004)
Financing activities	4,305,807	5,009,117	389,217
Investing activities	(27,029)	(32,322)	550,000
Effect of foreign rate changes on cash	19,495	(6,569)	369
Net cash inflow (outflow)	328,682	138,276	(1,994,418)
Cash & cash equivalents, start of the year	401,712	263,437	2,257,855
Cash & cash equivalents, end of the year	730,395	401,713	263,437
Cash & cash equivalents	730,395	401,713	263,437
Short-term investments	-	-	-
Total	730,395	401,713	263,437

Operating Activities

Net cash flow from operating activities listed above is a function of net income (loss) for the year, an add back of the net non-cash revenue and expense items (such as SBCE, amortization expense, deferred tax expense / (recovery) and the net change in year-end working capital items (for example, a net decrease in working capital in the year gives rise to a source of cash), with these components each year as follows:

For the year ended December 31,	2024	2023	2022
Comprehensive loss for the year	(9,077,795)	\$ (5,452,708)	(\$6,733,076)
Total non-cash expense items and lease items	3,239,208	1,914,845	2,043,965
	(5,838,587)	(3,537,863)	(4,689,111)
Change in non-cash working capital balances	1,868,996	(1,294,087)	1,755,107
Total cash provided by (used in) in operations	(3,969,591)	(4,831,950)	(2,934,004)

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Operating cash flow increased by \$862,359 in 2024 as compared to 2023 due to payment of outstanding accounts receivable from the Turkish SFD<sup>®</sup> Survey, net of accounts payable and accrued liability payments related to the Turkish SFD<sup>®</sup> Survey and deposits received on the 2025 SFD<sup>®</sup> Surveys.

Operating cash flow decreased by \$1,897,948 in 2023 as compared to 2022 due to payments of several 2022 deferred costs in 2023 and working capital requirement to support the Turkish SFD<sup>®</sup> Survey. Also, in Q1-22 the Company received payments for outstanding accounts receivable in US\$200,000 (CDN\$252,415).

## [Financing Activities](#)

**2024** – In 2024, proceeds were received from employee contributions under the ESP Plan and from convertible debentures. Beginning in Q2-24, the Company began payment on its revised aircraft lease, which as of Q2-24 is a finance lease, and continued long-term debt payments.

**2023** – Net proceeds from the Private Placement was \$1,622,057. Please see the section “*Private Placement*”. Proceeds from the Convertible Debentures were \$3,457,555 (US\$2,550,000). Please see the Item 5 B sections “*Ataraxia Debentures*” and “*November Debentures*”. Proceeds were also received from employee contributions under the ESP Plan and RSU’s. The Company began to repay its long-term debt, the HASCAP Loan, at the beginning of Q3-22. The repayment of financial liability was for the sales and leaseback agreement on NXT’s aircraft which ended in Q1-22.

**2022** – The Company began to repay its HASCAP Loan at the beginning of Q3-22. Proceeds were received from employee contributions under the ESP Plan, but at a lower rate due to the salary deferral. The repayment of financial liability was for the sales and leaseback agreement on NXT’s aircraft which ended in Q1-22. In Q4-22 net proceeds from the Offerings were \$432,244. Please see the sections “*Liquidity and capital resources*” for a discussion on the Offerings.

## [Investing Activities](#)

**2024** – The Company upgraded certain SFD<sup>®</sup> equipment in 2024 to enhance the data acquisition phase of the SFD<sup>®</sup> Survey.

**2023** – The Company upgraded certain SFD<sup>®</sup> equipment in Q4-23 to enhance the data acquisition phase of the SFD<sup>®</sup> Survey.

**2022** – Changes in short-term investments were for investments in guaranteed investment certificates to fund operations and investing of excess short-term cash.

## **C. Research and development, patents, and licenses, etc.**

R&D expenditures incurred to develop, improve, and test the SFD<sup>®</sup> survey system and related components are expensed as incurred. Any IP that is acquired for the purpose of enhancing R&D projects, if there is no alternative use for the IP, is expensed in the period acquired.

## [Patents](#)

As of the date of this 20-F, NXT has been granted SFD<sup>®</sup> patents on its SFD<sup>®</sup> technology in forty-seven jurisdictions, including Brazil (February 2022), India (July 2021), Russia (January 2017), Japan (July 2017), Canada (August 2017), Mexico (September 2017), the United States (two patents were granted in November 2017 and September 2018, respectively), China (April 2018), and Europe (January 2020). These patents protect our proprietary SFD<sup>®</sup> technology and serve as independent third-party recognition of our technological invention.

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#### **D. Trend information.**

We have historically conducted a limited number of service contracts each year, the dollar value and timing of securing and ultimate delivery of which are subject to numerous external factors.

As noted previously, the amount and timing of our annual revenues can vary widely year to year, as we derive our revenues from a limited number of service contracts each year and each individual contract may have a large effect on the aggregate annual revenues and profits. For example, in 2012, we conducted our first contract with PEMEX, the National Oil Company of Mexico. This project was completed in 2012 and was our largest to that time, at US\$5.8 million. In 2015, projects totaling US\$13 million were completed in Bolivia for YPFB, then our next survey in Nigeria during 2019 was for US\$8.9 million. In 2024 we completed SFD<sup>®</sup> surveys in Turkiye. At the date of this 20-F current external trends such as in commodity prices could affect our operations for the current fiscal year. Please see Item 3 D for a discussion on these risks.

#### **E. Critical Accounting Estimates**

In preparing the audited consolidated financial statements, NXT is required to make estimates and assumptions that affect both the amount and timing of recording assets, liabilities, revenues, and expenses since the determination of these items may be dependent on future events. The Company uses the most current information available and exercises careful judgment in making these estimates and assumptions. In the opinion of management, the 2024 audited consolidated financial statements have been properly prepared within reasonable limits of materiality and within the framework of the Company's significant accounting policies. The estimates and assumptions used are based upon management's best estimate as at the date of the December 31, 2024 audited consolidated financial statements. Estimates and assumptions are reviewed periodically and the effects of revisions are reflected in the period when determined. Actual results may differ from those estimates.

Certain estimates and judgments have a material impact where the assumptions underlying these accounting estimates relate to matters that are highly uncertain at the time the estimate or judgment is made or are subjective. In 2024 and 2023, the estimates and judgments included the assessment of impairment indicators of IP and recognition of SFD<sup>®</sup> related revenue.

The Company reviews IP for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable. The Company considers both internal and external factors when assessing for potential indicators of impairment of its IP, including the consideration of historical and forecasted SFD<sup>®</sup> related revenues, market capitalization, control premiums, and the SFD<sup>®</sup> related revenue multiples compared to industry peers. When indicators of impairment exist, the Company first compares the total of the estimated undiscounted future cash flows or the estimated sale price to the carrying value of an asset. If the carrying value exceeds these amounts, an impairment loss is recognized for the excess of the carrying value over the estimated fair value of the IP.

The Company recognizes SFD<sup>®</sup> related revenue in the consolidated financial statements based on the performance obligation for NXT in SFD<sup>®</sup> surveys, which are the acquisition, processing, interpretation and integration of SFD<sup>®</sup> data. Revenue from the sale of SFD<sup>®</sup> survey contracts is recognized over time by measuring the progress toward satisfaction of its performance obligation to the customer. The Company uses direct survey costs as the input measure to recognize revenue in any fiscal period. The percentage of direct survey costs incurred to date over the total expected survey costs to be incurred, provides an appropriate measure of the stage of the performance obligation being satisfied over time. The accounting for contracts that are not complete at the reporting date involves significant judgment, particularly as it relates to determining the total anticipated costs at completion.

#### **Off-balance sheet arrangements.**

The Company has no off-balance sheet arrangements as of the date of this 20-F other than office premise non-lease operating costs with Interloq Capital (the "Landlord"). If the Company were to default on its office lease the current month rent including operation costs plus the next three months become immediately due. [Note: the table was replaced with a principles-based liquidity and capital resources requirement focused on material short- and long- term cash requirements from known contractual and other obligations] NXT pays an estimated operating cost during the current year, but has the obligation to pay the actual operating costs incurred as defined in the office lease with the Landlord early in the first quarter of the preceding year if the estimate was low, or will receive a refund if the estimate was too high. Currently, the Company believes that the current operating cost estimate is reasonable and is constant with discussions with the Landlord under the Company's office lease.

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**Safe Harbor.**

The Company seeks safe harbor for our forward-looking statements. Please see the section titled “Forward-Looking Statements” above.

**ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES**

**A. Directors and senior management.**

Our articles of incorporation provide for a minimum of one director and a maximum of 15 directors comprising our Board. At present, our Board consists of five members.

Our directors are elected by our shareholders at our annual meeting of shareholders and hold the position either until the next annual shareholders’ meeting, the date of their resignation or until a successor is appointed.

The following sets forth information, including directorships in other reporting issuers, as of the date of this 20-F, for our directors, and executive officers:

**Peter Mork**  
**Healdsburg, California, USA**

*Director since*  
*July 2024*

Mr. Mork, has served as a Portfolio Manager at Mork Capital Management, LLC in Healdsburg, California since 2021, and in similar roles over the last two decades, drawing on investment sector expertise. Previously, he led Institutional Sales & Research at La Jolla Economics in San Diego. He is a Chartered Financial Analyst (CFA) charter holder and earned a Bachelor’s degree in Business/Economics from the University of California, Santa Barbara. His leadership experience includes serving on the boards of private and non-profit organizations, and chairing the investment committee for a local endowment.

Mr. Mork is chair of the Compensation Committee and a member of the Strategic Planning Committee.

**Theodore Patsellis**  
**Athens, Hellenic Republic**

*Director since*  
*June 2023*

Mr. Patsellis is a Greek attorney admitted to the Athens Bar Association since 1996, a Greek Ministry of Justice certified Mediator and the Owner of a boutique Law firm since 2013. He holds a Bachelor’s Degree from the National and Kapodistrian University of Athens - Law Faculty and an LL.M. degree from the Ludwig-Maximilian University of Munich. Having worked for many years with Ernst & Young, Hill International Inc. and other renowned law firms, Mr. Patsellis has acquired extensive experience working in diversified environments and a variety of business cultures. With a strong German background and the experience of having lived and worked in Germany, Greece, Serbia and Romania as a lawyer and tax professional, he was able to lead various teams of professionals involved in large business transactions in the South-East European region. His expertise spans across mergers and acquisitions, corporate and transaction law, local and international taxation, corporate governance and compliance. His industry knowledge ranges from the telecommunications and energy sectors to the retail, hospitality and consumer products, pharmaceuticals, and real estate. He is currently sitting on the board of directors of PANA Holdings in Mauritius, (a holding company with subsidiaries in the oil & gas, agriculture, ESG, and the digital space) and Vivid Living Co. S.A. in Greece (a trading entity that trades in air purifiers).

Mr. Patsellis is a member of the Audit Committee and the Strategic Planning Committee.

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**Charles Selby**  
**Calgary, Alberta, Canada**

*Chairman since*  
*June 2024*

*Director since*  
*January 2006*

Mr. Selby obtained a Bachelor of Science (Hons.) degree in Chemical Engineering from Queen's University, a Juris Doctorate degree from the University of Calgary, and is a registered professional engineer and lawyer in the Province of Alberta. He previously practiced law for two large Canadian law firms, specializing in securities and international transactions primarily in the energy business. Mr. Selby served as Vice President of Pengrowth Corporation for almost 20 years participating in the growth of that entity to an enterprise value of more than \$4 billion. He also has served as a director and officer of a number of reporting issuers in the oil and natural gas industry including Arakis Energy Corp., with operations in the Sudan. Since 2017 he has served as President and director of Caledonian Midstream Corporation, a company that has natural gas and oil production together with a sour natural gas plant and infrastructure in the Alberta foothills and is also the CEO and a director of Wildcat Royalty Corporation.

Mr. Selby is the Chairman of NXT. He is also Chair of the Audit and Disclosure Committees and a member of the Strategic Planning and Compensation Committee.

**Gerry Sheehan**  
**Dublin, Leinster, Ireland**

*Director since*  
*July 2021*

Mr. Sheehan has worked continuously in international oil and gas exploration, development, and production for over 40 years. He has broad technical and business development experience in Africa, South Asia and Europe.

Mr. Sheehan began his career in 1982 as a geophysicist working with the British National Oil Corporation ("BNOC"), after privatization becoming Britoil plc. He evaluated acreages in the United Kingdom, Dutch, Danish, Irish and Norwegian sectors. In 1986, he transferred to the BNOC Houston office as a technical auditor. He was later seconded to the Global Basin Evaluation Team, focusing on Africa and Asia.

In 1987, Mr. Sheehan joined the fledgling oil company Tullow Oil plc. as part of the founding technical team. The company was successful in Senegal on a World Bank-sponsored gas to power project. New acreage was secured in the UK onshore, Pakistan, Syria and Yemen, with follow-on successful exploration and field development projects.

From 1992 to 1998, Mr. Sheehan held the position of Chief Geophysicist. The company operated in South Asia culminating in the discovery and development of the one trillion cubic feet-sized Bangora gas field in Bangladesh on behalf of Texaco and Chevron. His project team also deployed a successful re-development of the offshore Espoir field in Cote d'Ivoire, West Africa, with partners Canadian Natural Resources Limited and Addax Petroleum.

From 1998 to 2006, he held the post of International Exploration Manager, this role also encompassed a business development responsibility. This was a time of rapid growth and expansion in the company with new assets acquired in West Africa, North Africa, Central and Eastern Europe and South Asia. In 2004, Mr. Sheehan led the technical due-diligence team on the corporate acquisition of Energy Africa plc. The enlarged company rapidly expanded its footprint in Africa with notable oil exploration successes in Ghana and Uganda, both countries now seen as significant oil countries.

In 2007, Mr. Sheehan founded a private company, Blackstairs Energy. The company acquired oil field rehabilitation projects in Romania, and exploration acreage in Armenia and Senegal. The company also undertook technical and commercial asset evaluations on behalf of third parties.

In 2014, Mr. Sheehan was a founder of T5 Oil & Gas, a private London-based oil and gas company. T5 is a licence partner in a portfolio of assets in Gabon, comprising offshore oil production and a suite of un-developed oil and gas fields, both offshore and onshore, now being advanced to development. He has been continuously employed by T5 Oil & Gas since 2014.

Mr. Sheehan holds a Bachelor of Science degree in Geology and a Master of Science in Applied Geophysics, both obtained from the National University of Ireland. He is a Fellow of the Geological Society (FGS, elected 2009) and is an active member of the American Association of Petroleum Geologists (AAPG, 1986) and the Society of Exploration Geophysicists (SEG, 1996).

Mr. Sheehan is the chair of the Strategic Planning Committee and a member of the Governance Committee.

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**Jeffrey Tilson**  
**Montecito, California, USA**

*Director since*  
*December 2024*

Mr. Tilson is a Fee-Only Investment Advisor and the President of JST Investment Consulting, a Seal Beach-based firm he founded in 2011. With over two decades of experience in financial advising, Mr. Tilson is dedicated to providing clients with personalized, transparent, and fiduciary-focused investment strategies.

Previously, Mr. Tilson spent 10 years as a financial advisor with Ameriprise Financial Services, where he co-managed and serviced approximately US\$220 million in client investment assets. Recognizing an opportunity to offer a higher level of service on a more cost-effective platform, he established JST Investment Consulting as a referral-only firm that prioritizes client success over sales-driven models.

Mr. Tilson holds a double major in Finance, Real Estate and Law, and Management Information Systems from California State University, Long Beach. He also holds professional designations from the College for Financial Planning, including:

- Chartered Retirement Planning Counselor (CRPC)
- Accredited Asset Management Specialist (AAMS)
- Accredited Wealth Management Advisor (AWMA)

Mr. Tilson maintains memberships in industry organizations, including:

- National Association of Personal Financial Advisors (NAPFA)
- Fee-Only Network
- Professional Fiduciary Association of California (PFAC)
- Association of Financial Educators (AFE)

Mr. Tilson has held leadership roles in nonprofit organizations, including:

- President of Friends of the Child Development Center, an organization supporting early childhood education and development programs.
- President of Business Networking International (BNI).

Mr. Tilson is a member of the Audit Committee.

**Thomas E. Valentine**  
**Calgary, Alberta, Canada**

*Director since*  
*November 2007*

*Corporate Secretary since*  
*April 2014*

Mr. Valentine is a Partner at Norton Rose Fulbright Canada LLP, where he has practiced law, both as a barrister and a solicitor, since being admitted to the Law Society of Alberta in 1987. He is a member of the firm's Energy and Infrastructure practice group and is involved in energy-related matters in Canada and throughout the Middle East, Africa, Asia and South America. He holds a Bachelor of Arts degree from the University of British Columbia, a Bachelor of Laws degree from Dalhousie University, and a Master of Laws degree from the London School of Economics.

Over the past twenty years, Mr. Valentine has delivered lectures and held workshops around the globe on a wide range of international oil and gas law topics in locations such as Afghanistan, Mozambique, Uruguay, Argentina, Singapore, Dubai, Doha, London, Amsterdam and South Korea.

Mr. Valentine is Corporate Secretary of Touchstone Exploration Inc., and formerly was a director of two other Canadian public companies, Calvalley Petroleum Inc. (to May 2015) and Veraz Petroleum Ltd. (to December 2012).

Mr. Valentine is the Chair of the Governance Committee and a member of the Compensation Committee.

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**Bruce G. Wilcox**  
**New York, New York, USA**

*Chief Executive Officer*  
*since June 2024;*

*Interim Chief Executive Officer*  
*June 2023 to June 2024; and*

*Director since*  
*June 2015*

Mr. Wilcox has had a long career as an investment company CEO, analyst and portfolio manager. He spent most of his career with Cumberland Associates, LLC, a New York equity fund, from 1986 through retirement in 2010, progressing from analyst/portfolio manager to partner (1989), and Chairman of the Management Committee (1997). Mr. Wilcox specialized in Cumberland's investments in the energy industry (exploration and production and service companies), with an emphasis on value and long-term holdings. During his tenure, the fund's assets under management ranged from US\$0.7 billion to \$1.5 billion.

From 1984 to 1986, Mr. Wilcox was with Central National-Gottesman, Inc. as an analyst and portfolio manager on a team responsible for a \$500 million listed equity portfolio.

Mr. Wilcox was CEO of E Street Management, LLC from 2016 through 2020, which managed a long/short equity fund of funds.

From January 2011 to present he has also been one of three managing members of Xiling Fund III, LLC, part of a series of private equity funds (US\$100+ million) which invests in museum-quality Imperial Chinese porcelains, archaic bronzes and ink paintings.

Mr. Wilcox obtained a Bachelor of Arts (Honors) in Modern Chinese from the University of California, Santa Barbara (1977); and a Master of International Management from the American Graduate School of International Management in Phoenix (1980, now a part of Arizona State University).

Mr. Wilcox is a member of several boards, including the Teachers College of Columbia University (2003 to date, including serving as the Chair of the Investment Committee for that entire period), the University of California Santa Barbara Foundation (2003 to date, including as former Chair of the Board of Trustees, Investment and Finance Committees), and was a Trustee (2001 to May 2023) of the Manhattan Institute For Policy Research, a leading urban, state, and national policy institution, which works on matters such as energy policy.

Mr. Wilcox is a member of the Disclosure Committee.

**Eugene Woychyshyn**  
**Calgary, Alberta, Canada**

*VP Finance and CFO since*  
*December 2018; and*

*Director since July 2024*

Mr. Woychyshyn brings to NXT over 25 years of leadership experience in multiple industries and worldwide regions including North America, Europe and Asia. Mr. Woychyshyn has extensive hands-on experience and accomplishments in mergers and acquisitions, organizational restructuring, purchasing, treasury, financial reporting and control, compliance, human resource management and tax planning. In almost ten years as an expatriate with assignments in Norway, China, the United States and Southeast Asia, Mr. Woychyshyn developed international business competencies.

Mr. Woychyshyn originally served as a consultant to NXT from November 2017 to November 2018, providing controllership services. From 2015 to 2017 he was the Chief Financial Officer of Imaging Dynamics Company Limited.

Mr. Woychyshyn is a Chartered Professional Accountant, CA, who holds a Bachelor of Commerce (Hons) degree from the University of Manitoba and a Masters of Business Administration degree from St. Joseph's University, Philadelphia PA.

Mr. Woychyshyn is a member of the Disclosure Committee.

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None of the directors or executive officers is, or has been in the last ten years, a director, CEO or chief financial officer of any company, including NXT, except as noted below that: (i) was subject to a cease trade order or order similar to a cease trade order or an order that denied the relevant company access to any exemption under securities legislation for a period of more than 30 consecutive days that was issued while the director or executive officer was acting in that capacity; or (ii) was subject to a cease trade order, an order similar to a cease trade order, or an order that denied the relevant company access to any exemption under securities legislation after the proposed director ceased to be a director, CEO or chief financial officer and which resulted from an event that occurred while that person was acting in such a capacity.

None of the directors or executive officers is, or has been in the last ten years, a director or executive officer of any company, including NXT, that, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets.

None of the directors or executive officers has, within the last ten years, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold their assets.

Charles Selby was a board member of Montana Exploration Corp. ("MEC") when it was issued a cease trade order by the Alberta Securities Commission on May 4, 2018 against MEC for failing to file its annual audited financial statements, annual management's discussion and analysis and certification of annual filings within the required time period. MEC ceased operations in June 2021.

Messrs. Mork, Patsellis, Selby, Sheehan, Tilson and Valentine are considered "independent" within the meaning of Canadian securities law.

## **B. Compensation**

### Executive Compensation

The following table sets out certain information regarding the annual and long-term compensation of the Chief Executive Officer and the Chief Financial Officer as at December 31, 2024. The Chief Financial Officer is based in the Calgary, Canada head office and the Chief Executive officer is based in New York, New York, USA. Both are paid in Canadian dollars.

Summary compensation table for the year ended December 31, 2024:

Name & Principal Position	Salary <sup>(1)</sup>	Cash bonus	Share-based rewards <sup>(2)</sup>	Other <sup>(3)</sup>	Total
Bruce G. Wilcox CEO <sup>(4)</sup>	\$ 220,000	\$ 7,000	\$ 11,200	\$ -	\$ 238,200
Eugene Woychyshyn, VP of Finance & CFO <sup>(5)</sup>	\$ 186,250	\$ 8,000	\$ 44,062	\$ 1,764	\$ 240,076

(1) Accrued salary and director fees. Mr. Wilcox elected not to take director fees in 2024.

(2) Share-based rewards represent the Company match to the executive's contribution to the ESP Plan, RSU Grants, stock option grants, and DSU grants.

(3) "Other" consists of the taxable portion of company paid amounts for group health benefits.

(4) Mr. Wilcox became the CEO on June 3, 2024.

(5) Mr. Woychyshyn became a director on July 15, 2024.

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(See Item 6.E “Share Ownership” for details regarding stock options, DSUs, RSUs, and ESP Plan shares granted to officers).

No amount is set aside or accrued by the Company or its subsidiaries to provide pension, retirement or similar benefits to officers or directors.

Director Compensation

NXT compensates directors for serving on our Board by paying a combination of an annual cash retainer, which may be compensated in DSUs, as well periodically granting stock options to purchase NXT common shares. No options were granted to directors in 2024.

In 2024, the directors’ fees were not paid in cash. Mr. Mork and Mr. Woychyshyn elected to take their director fees in DSUs, when allowable under the DSU Plan terms. The annual retainer was based on \$30,000 (\$35,000 in the case of the Chairman of the Audit Committee). Total compensation payable to non-executive directors during 2024 is summarized as follows:

	<b>2024</b>
Peter Mork <sup>(1)</sup>	\$ 1,731
Theodore Patsellis <sup>(2)</sup>	30,000
Charles Selby	35,000
Gerry Sheehan	30,000
Jeffrey Tilson <sup>(2)</sup>	1,304
John Tilson <sup>(3)</sup>	28,370
Tom Valentine	30,000

(1) Mr. Mork was elected a director effective July 16, 2024.

(2) Mr. Jeffrey Tilson was appointed a director effective December 16, 2024.

(3) Mr. John Tilson retired as a director effective December 11, 2024.

We do not provide additional compensation for committee participation (other than as noted previously regarding the minor additional amount for service as the Chairman of the Audit Committee). (See Item 6.E “Share ownership” for details regarding stock options and DSUs granted to directors.)

The Company reimburses directors for out-of-pocket expenses for attending Board and committee meetings. We do not provide termination benefits for directors.

**C. Board practices.**

Expiration Dates

No director or member of our administrative, or supervisory bodies has an expiration date for their current term of office. Directors are elected by shareholders at the annual meeting of shareholders and hold the position either until the next annual shareholders’ meeting or until a successor is appointed. The period during which each individual has served as a director is set out in the table under Item 6.A – “Directors and senior management”.

Service Contracts

No independent directors have service contracts with the Company or any of its subsidiaries that provide benefits upon termination of employment.

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## **Board of Directors Mandate**

The principal role of the Board is stewardship of the Company through the creation of shareholder value, including the protection and enhancement of the value of its assets, as the fundamental objective. The stewardship responsibility means that the Board oversees the general operation of the business and management, which is responsible for the day-to-day conduct of the business. The Board must assess and ensure systems are in place to manage the risks of the Company's business with the objective of preserving the Company's assets. The Board, through the CEO, sets the attitude and disposition of the Company towards compliance with applicable laws, environmental, safety and health policies, financial practices and reporting. In addition to its primary accountability to shareholders, the Board is also accountable to employees, government authorities, other stakeholders and the public. The Mandate of the Board is posted on the Company website and may be viewed at [www.nxtenergy.com](http://www.nxtenergy.com) or you may request a copy be mailed to you by writing to our offices at Suite 302, 3320 - 17th Avenue SW Calgary, Alberta, Canada, T3E 0B4.

## **Board Committees**

### **CORPORATE GOVERNANCE COMMITTEE**

The Company and the Board recognize the importance of corporate governance to the effective management of the Company and to its shareholders. The Company's approach to significant issues of corporate governance is designed with a view to ensuring that the business and affairs of the Company are effectively managed so as to enhance shareholder value. The Mandate of the Corporate Governance Committee is posted on the Company website and may be viewed at [www.nxtenergy.com](http://www.nxtenergy.com) or you may request a copy be mailed to you by writing to our offices at Suite 302, 3320 - 17th Avenue SW Calgary, Alberta, Canada, T3E 0B4.

The Board and management endorse the need to establish forward-looking governance policies and to continuously evaluate and modify them to ensure their effectiveness.

#### **Composition of the Corporate Governance Committee**

Mr. Valentine (Chair), Mr. Sheehan and Mr. Mork are members of the Corporate Governance Committee. All members of the Corporate Governance Committee are independent within the meaning of Canadian National Instrument 58-101.

#### **Responsibilities of the Corporate Governance Committee**

The Corporate Governance Committee's duties, as outlined in its charter, are to deal with the Company's approach to corporate governance and the promotion of compliance with industry and regulatory standards. The committee is responsible for overseeing and assessing the functioning of the Board and the committees of the Board and for the development, recommendation to the Board, implementation and assessment of effective corporate governance principles and guidelines. The Committee's responsibilities also include identifying new candidates for director and recommending that the Board select qualified director candidates for election at the next annual meeting of shareholders.

### **DISCLOSURE COMMITTEE**

#### **Composition of the Disclosure Committee**

The Disclosure Committee currently consists of Mr. Selby, Mr. Wilcox and Mr. Woychyshyn (VP of Finance & Chief Financial Officer ("CFO") of the Company).

#### **Responsibilities of the Disclosure Committee**

The Disclosure Committee's duties are to ensure that the Company provides timely, accurate and balanced disclosure of all material information about the Company and to provide fair and equal access to such information. All news releases, including but not limited to releases of material information, are managed by the Disclosure Committee. If the information has been determined by the Disclosure Committee to be material, news releases will be prepared, reviewed and then disseminated through a news-wire service that provides simultaneous service to widespread news services and financial media. Additionally, the Disclosure Committee is responsible for ensuring public disclosure through filing these news releases on SEDAR+, EDGAR, and our website.

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## STRATEGIC PLANNING COMMITTEE

### Composition of the Strategic Planning Committee

Messrs. Sheehan (Chair), Selby, and Patsellis are the current members of the Strategic Planning Committee. All members of the Strategic Planning Committee are independent within the meaning of National Instrument 58-101 – *Disclosure of Corporate Governance Practices*.

### Responsibilities of the Strategic Planning Committee

The Strategic Planning Committee's duties are to set out the long-term goals of the Company and to take an active role in the development and execution of plans to achieve those goals. The Committee participates in establishing priority areas of Company business, assessment of strategic initiatives from Company senior executives with regard to development and implementation control of the Company Strategy and business area specific strategies of the Company. The Committee also makes recommendations regarding the overall organization and management structure including areas where management needs to be strengthened, reviewing the organizational job descriptions, requirements and also procedures for coordination of organizational management and Board resources. The Committee is actively involved in the Company's strategic planning process and reviews all materials relating to the strategic plan with management. The Board is responsible for reviewing and approving the strategic plan. At least one Board meeting each year is centered on discussing and considering the strategic plan, which takes into account the risks and opportunities of the business. Management must seek the Board's approval for any transaction that would have a significant impact on the strategic plan.

## AUDIT COMMITTEE

### Composition of the Audit Committee

The Audit Committee consists of Messrs. Selby (Chair), Tilson, and Patsellis. All members of the Audit Committee are independent within the meaning of National Instrument 52-110 – *Audit Committees*, and each member is financially literate. The Company's Audit Committee Charter is posted on our website and may be viewed at [www.nxtenergy.com](http://www.nxtenergy.com) or you may request a copy be mailed to you by writing to our offices at Suite 302, 3320 – 17th Avenue SW, Calgary, Alberta, Canada, T3E 0B4. All members of the Audit Committee have an educational background and experience that provides them with the knowledge and ability to understand accounting policies and related financial reporting and disclosure issues, in order to fulfill their duties and responsibilities as a member of the Audit Committee.

### Charles Selby

Mr. Selby is both a lawyer and professional engineer, with past legal experience specializing in securities and corporate finance matters. He has served on the board or in senior management roles with a number of private firms as well as reporting issuers in the oil and natural gas industry. Mr. Selby has previously served on the audit committees of Alta Canada Energy Corp. and served as the audit committee chairman for Idaho Natural Resources Corp. (formerly Bridge Resources Corp.).

### Jeffrey Tilson

Mr. Tilson spent 10 years as a financial advisor with Ameriprise Financial Services and currently owns, where he co-managed and serviced approximately US\$220 million in client investment assets. He currently runs his referral-only firm, JST Investment Consulting, that he established. He holds a double major in Finance, Real Estate & Law, and Management Information Systems from California State University, Long Beach and holds professional designations from the College for Financial Planning, including:

- Chartered Retirement Planning Counselor (CRPC)
- Accredited Asset Management Specialist (AAMS)
- Accredited Wealth Management Advisor (AWMA)

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Mr. Tilson maintains active memberships in industry organizations, including:

- National Association of Personal Financial Advisors (NAPFA)
- Fee-Only Network
- Professional Fiduciary Association of California (PFAC)
- Association of Financial Educators (AFE).

### **Theodore Patsellis**

Mr. Patsellis obtained a Bachelor's Degree from the National and Kapodistrian University of Athens - Law Faculty and an LL.M. degree from the Ludwig-Maximilian University of Munich. His expertise comprises mergers and acquisitions, corporate and transactional law, local and international taxation, corporate governance and compliance. He has acquired experience working in diversified environments and a variety of business cultures as a lawyer and tax professional. He led a team of professionals involved in large business transactions in the South-East European region.

Audit Committee Oversight - The Company's Board has adopted all recommendations by the Audit Committee with respect to the nomination and compensation of the external auditor.

Pre-Approval Policies and Procedures - The Audit Committee has adopted a formal policy requiring the pre-approval of all audit and non-audit related services to be provided by the Company's principal auditor prior to the commencement of the engagement, subject to the following:

- the Audit Committee will review annually a list of audit, audit related, recurring tax and other non-audit services and recommend pre-approval of those services for the upcoming year. Any additional requests will be addressed on a case-by-case specific engagement basis;
- for engagements not on the pre-approved list, the Audit Committee has delegated to the Chair of the Committee the authority to pre-approve individual non-audit service engagements with expected costs of up to \$50,000 (annual aggregate total) subject to reporting to the Audit Committee, at its next scheduled meeting; and
- for engagements not on the pre-approved list and with expected costs greater than \$50,000 (annual aggregate total), the entire Audit Committee must approve this service, generally at its next scheduled meeting.

### **COMPENSATION COMMITTEE**

#### Composition of the Compensation Committee

Messrs. Mork (Chair), Selby and Valentine are the current members of the Compensation Committee. All members are independent within the meaning of National Instrument 58-101 – *Disclosure of Corporate Governance Practices* and have extensive direct financial and legal experience which is relevant to fulfilling their responsibilities related to executive compensation. Mr. Selby has approximately 25 years of experience in advising a Canadian company on compensation issues and has served on the compensation committees of the board of directors of other reporting issuers. Mr. Valentine has served on the compensation committee of two public companies, and has dealt with compensation and employment law issues for 30 years. In his career as a portfolio manager, Mr. Mork has advised on and analyzed compensation plans for public companies. In addition, he has gained relevant human resource experience serving on various boards. The charter of the Compensation Committee is posted on the Company's website and may viewed at [www.nxtenergy.com](http://www.nxtenergy.com). Investors may also request a copy be mailed to them by writing to our offices at Suite 302, 3320 – 17th Avenue SW, Calgary, Alberta, Canada, T3E 0B4.

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Responsibilities of the Compensation Committee

The Compensation Committee's duties, as outlined in its charter, are to deal with the assessment of management and succession to key positions and compensation within the Company. The Compensation Committee shall assist the Board in discharging the Board's oversight responsibilities relating to the compensation and retention of key senior management employees, and in particular the CEO, with the skills and expertise needed to enable the Company to achieve its goals and strategies at fair and competitive compensation and appropriate performance incentives. In discharging its responsibilities, the Compensation Committee will report and where appropriate, make recommendations to the Board in respect of the matters identified in the charter.

**D. Employees**Fiscal year ended December 31, 2024

As of the fiscal year ended December 31, 2024, we had a total of 11 employees. NXT has no employees that are members of a labor union. The following summarizes the number of employees and independent contractors by main job function as at December 31, 2024:

<b>Function</b>	<b>employees</b>	<b>contractors</b>	<b>total</b>
Senior management team	2	-	2
Finance, administration and sales	2	-	2
Operations and technical development	7	-	7
Total	11	-	11

Ten of the above noted staff are based in Canada; our CEO is based in New York City, New York, USA. The seven operations and technical development staff include one research scientist holding a Ph.D., two geoscientists, two engineers, a logistics and safety professional, and an information technology professional. We periodically engage other technical and administrative contract personnel as required on a project basis.

Fiscal year ended December 31, 2023

As of the fiscal year ended December 31, 2023, we had a total of 11 employees. NXT has no employees that are members of a labor union. The following summarizes the number of employees and independent contractors by main job function as at December 31, 2023:

<b>Function</b>	<b>employees</b>	<b>contractors</b>	<b>total</b>
Senior management team	2	-	2
Finance, administration and sales	3	-	3
Operations and technical development	6	-	6
Total	11	-	11

Ten of the above noted staff were based in Canada; our Interim CEO was based in New York City, New York, USA. The six operations and technical development staff include one research scientist holding a Ph.D., two geoscientists, two engineer and an information technology professional. We periodically engaged other technical and administrative contract personnel as required on a project basis.

Fiscal year ended December 31, 2022

As of the fiscal year ended December 31, 2022, we had a total of 10 employees. NXT has no employees that are members of a labor union. The following summarizes the number of employees and independent contractors by main job function as at December 31, 2022:

<b>Function</b>	<b>employees</b>	<b>contractors</b>	<b>total</b>
Senior management team	2	-	2
Finance, administration and sales	2	1	3
Operations and technical development	6	-	6
Total	10	1	11

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All of the above noted staff were based in Canada. The six operations and technical development staff includes one research scientist holding a Ph.D. and three geoscientists. We periodically engaged other technical and administrative contract personnel as required on a project basis.

#### **E. Share ownership.**

Information on the ownership of our common shares is given under Item 7, Major Shareholders and Related Party Transactions.

#### **Summary of Stock Options, Restricted Share Units, Employee Share Purchase Plan and Deferred Share Units Granted To Executive Officers and Directors**

All stock options have been granted pursuant to the Stock Option Plan (the “Plan”) of the Company or predecessor plans with substantially the same terms. The Plan is approved and ratified by shareholders every three years at the Company’s annual general meeting (“AGM”). The Plan, was re-approved and ratified at the Company’s AGM held on June 6, 2022. Pursuant to this Plan, all stock option grants must be approved by the Board. Stock options may be granted to the directors, officers and employees of NXT and to consultants retained by the Company. The aggregate number of common shares reserved for issuance under this Plan, and any other plan of the Company, shall not, at the time of the stock option grant, exceed ten percent of the total number of issued and outstanding shares (calculated on a non-diluted basis) unless the Company receives the permission of the stock exchange or exchanges on which the shares are then listed to exceed such threshold. No stock option shall be exercisable for a period exceeding five (5) years from the date the stock option is granted unless the Company receives the permission of the stock exchange or exchanges on which the shares are then listed and as specifically provided by the Board and as permitted under the rules of any stock exchange or exchanges on which the shares are then listed, and in any event, no stock option shall be exercisable for a period exceeding ten (10) years from the date the option is granted.

Stock options are generally issued with a three-year vesting period wherein entitlement to exercise one third of the options granted shall vest at the end of each of the first three years following the grant date. The exercise price for an option grant is set at the last trade price on the date preceding the grant or some higher price at the discretion of the Board.

The RSU is approved and ratified by shareholders every three years at the Company’s AGM. The RSU, as was re-approved and ratified at the Company’s AGM held on August 2, 2023. Pursuant to the RSU, all grants must be approved by the Board of the Company. RSU’s may be granted to the directors, officers and employees of NXT and to consultants retained by the Company. The aggregate number of common shares reserved for issuance under this Plan, and any other plan of the Company, shall not, at the time of the RSU grant, exceed ten percent of the total number of issued and outstanding shares (calculated on a non-diluted basis). The RSU’s are generally issued with a three-year vesting where they shall vest at the end of each of the first three years following the grant date. The price is determined on the vesting date.

DSU Plan was approved and ratified by the shareholders at the Company’s annual meeting on June 6, 2022. The DSU Plan is a long-term incentive plan that permits the grant of DSUs to qualified directors, as determined by the Board in its absolute discretion (collectively, the “Designated Participants”). Designated Participants are required to elect (in respect of each calendar year) the amount of the aggregate annual retainer or fee to be received in the form of DSUs, cash, Common Shares purchased on the secondary market, or a combination thereof, subject to requirements imposed by the Board to receive a specified minimum value of his or her annual retainer or fee in the form of DSUs. DSUs granted under the DSU Plan are to be settled at the election of the Board in cash, Common Shares issued from treasury (subject to Shareholder approval of unallocated entitlements thereunder every three years thereafter), or, at the election of the Board, or a combination of cash and Common Shares.

The ESP Plan is approved and ratified by shareholders every three years at the Company’s AGM. The ESP Plan was initially approved and ratified at the Company’s AGM held on August 2, 2023. The shareholders of the Company and subsequently the TSX approved, the ESP Plan. The ESP Plan allows employees and other individuals determined by the Board to be eligible to contribute a minimum of 1% and a maximum of 10% of their earnings to the plan for the purchase of common shares in the capital of the Company, of which the Company will make an equal contribution. Common shares contributed by the Company may be issued from treasury or acquired through the facilities of the TSX. During 2024, 2023 and 2022 the Company has elected to issue common shares from treasury.

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The following stock options, RSUs, DSUs and ESP Plan matches were granted to NXT's executive officers and directors in the three prior fiscal years ended December 31, 2024, 2023, and 2022 and to date of this 20-F.

### 2025 to the date of this 20-F:

- A total of 1,400,000 stock options with an exercise price of \$0.203 per common share were issued to directors of the Company;
- A total of 144,563 DSUs were earned by directors of the Company;
- A total of 400,000 RSU were granted to officers of the Company on February 24, 2025; and
- A total of 38,549 common shares were matched by the Company through the ESP Plan for an executive officer for the year-to-date period ended as of the date of this 20-F.

### In 2024:

- A total of 82,872 DSUs were earned by directors of the Company;
- A total of 200,000 RSU were granted to officers of the Company on February 21, 2024; and
- A total of 112,904 common shares were matched by the Company through the ESP Plan for an executive officer.

### In 2023:

- A total of 150,000 of stock options held by an officer of the Company expired;
- A total of 566,500 stock options with an average exercise price of \$0.222 per common share were earned by a director of the Company in lieu of director fees;
- A total of 850,000 stock options with an average exercise price of \$0.216 per common share were granted to directors and an officer of the Company;
- A director forfeited 100,000 stock options with an average exercise price of \$0.216 upon his resignation from the Board;
- No RSUs were granted to officers of the Company;
- No DSUs were earned by directors of the Company; and
- A total of 78,571 common shares were matched by the Company through the ESP Plan for executive officers for the year ended December 31, 2023.

### In 2022:

- A total of 134,060 stock options with a weighted average exercise price of \$0.40 per common share were earned by a director of the Company in lieu of director fees and 31,400 stock options held by a director with a weighted average exercise price of \$0.51 were cancelled;
- No RSUs were granted for the year ending December 31, 2022 to officers of the Company;
- No DSUs were granted for the year ending December 31, 2022 to directors of the Company; and
- A total of 34,082 common shares were matched by the Company through the ESP Plan for executive officers for the year ended December 31, 2022.

The following table sets forth information regarding outstanding stock options which have been granted to our directors and officers as of the date of the 20-F. All options are issued at an exercise price set at the weighted average trading price on the five trading dates prior to the grant date. Each option entitles the option holder to acquire one common share of the Company.

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**Issued and outstanding stock options held by directors and officers of the Company** (as of the date of this 20-F)

Name and Position	Exercise Price	Option Grant Date	Option Expiry Date	# of options held	% of total outstanding options
<b>Theodore Patsellis</b>	\$ 0.259	14-Sep-23	14-Sep-28	100,000	
Director	\$ 0.252	28-Sep-23	28-Sep-28	36,400	
	\$ 0.203	24-Feb-25	24-Feb-30	200,000	
				<b>336,400</b>	<b>8.4%</b>
<b>Charles Selby</b>	\$ 0.216	06-Jan-23	06-Jan-28	100,000	
Chairman	\$ 0.264	11-Jan-23	11-Jan-28	177,200	
	\$ 0.200	05-Jun-23	05-Jun-28	55,400	
	\$ 0.252	28-Sep-23	28-Sep-28	42,450	
	\$ 0.203	24-Feb-25	24-Feb-30	200,000	
				<b>575,050</b>	<b>14.3%</b>
<b>Gerry Sheehan</b>	\$ 0.216	06-Jan-23	06-Jan-28	<b>100,000</b>	
Director	\$ 0.203	24-Feb-25	24-Feb-30	200,000	
				<b>300,000</b>	<b>7.5%</b>
<b>Jeffrey Tilson</b>	\$ 0.203	24-Feb-25	24-Feb-30	<b>200,000</b>	<b>5.0%</b>
Director					
<b>Thomas Valentine</b>	\$ 0.216	06-Jan-23	06-Jan-28	100,000	
Director	\$ 0.200	05-Jun-23	05-Jun-28	110,800	
	\$ 0.203	24-Feb-25	24-Feb-30	200,000	
				<b>410,800</b>	<b>10.2%</b>
<b>Bruce G. Wilcox</b>	\$ 0.216	06-Jan-23	06-Jan-28	100,000	
CEO and Director	\$ 0.264	09-Jan-23	09-Jan-28	52,650	
	\$ 0.203	24-Feb-25	24-Feb-30	200,000	
				<b>352,650</b>	<b>8.8%</b>
<b>Eugene Woychyshyn</b>	\$ 0.216	06-Jan-23	06-Jan-28	<b>250,000</b>	
VP Finance & CFO	\$ 0.203	24-Feb-25	24-Feb-30	200,000	
				<b>450,000</b>	<b>11.2%</b>
<b>Total held by officers and directors</b>				<b>2,624,900</b>	<b>65.4%</b>

**Issued and outstanding RSUs held by directors and officers of the Company** (as of the date of this 20-F)

Name and Position	RSU Grant Date	RSU Expiry Date	Outstanding RSUs	% of total Outstanding RSUs
<b>Bruce G. Wilcox</b>	21-Feb-24	21-Feb-27	53,333	
CEO and director	24-Feb-25	24-Feb-28	200,000	
			<b>253,333</b>	<b>10.0%</b>
<b>Eugene Woychyshyn</b>	21-Feb-24	21-Feb-27	80,000	
VP Finance & CFO and director	24-Feb-25	24-Feb-28	200,000	
			<b>280,000</b>	<b>11.0%</b>
<b>%</b>			<b>533,333</b>	<b>21.0%</b>

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**Outstanding DSUs held by directors of the Company** (as of the date of this 20-F)

<b>Name</b>	<b>Position</b>	<b>Outstanding DSUs</b>	<b>% of Outstanding</b>
Peter Mork	Director	69,416	26.2%
Charles Selby	Chairman	69,997	26.4%
Jeffrey Tilson	Director	27,980	10.6%
Bruce G. Wilcox	CEO and director	27,980	10.6%
Eugene Woychyshyn	VP Finance & CFO and director	69,416	26.2%
		264,789	100.0%

**F. Disclosure of a Registrant’s Action to Recover Erroneously Awarded Compensation**

Not applicable.

**ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS**
**A. Major shareholders.**

The following table sets forth information concerning the beneficial ownership of our common shares as of the date of this 20-F by persons who beneficially own 5% or more of the outstanding common shares of NXT, each person who is a director of NXT, each executive officer named in this Form 20-F, each individual referenced in Item 6.E above and all directors and executive officers as a group. For the purposes of this Form 20-F, a person is considered to be a “beneficial owner” of common shares in the Company if that person has, or shares with another person, the power to direct the vote or disposition of the common shares or to receive the economic benefit of ownership of the common shares.

A person is also deemed to be a beneficial owner of a common share if that person has the right to acquire the share within 60 days by option or other agreement (whether or not, in the case of a stock option, the current market price of the underlying common share is below the stock option exercise price). Therefore, the table below also reflects, for each such beneficial owner, the number of options exercisable into common shares, RSUs and DSUs to vest, within 60 days of the date of this 20-F that are owned by each beneficial owner, but, in determining the percentage ownership and general voting power of such person, does not assume the exercise of options or the conversion of securities owned by any other person.

We believe that the beneficial owners of common shares listed below, based on information they furnished, have sole voting and investment power over the number of shares listed opposite their names. The percentage of beneficial ownership is based on 79,482,768 common shares issued and outstanding as of the date of this 20-F. This total of 79,482,768 excludes all outstanding options that are exercisable within 60 days of 20-F, and any outstanding convertible debentures, but which both are adjusted for each person’s % purposes as noted in footnote 5 below).

<b>Beneficial Ownership of Directors and Officers (“D&amp;O”)</b>	<b>Beneficially Owned as at the date of this 20-F</b>	<b>Percent of Common Shares <sup>5</sup></b>
<b>Directors and Officers:</b>		
Peter Mork <sup>1</sup>	499,653	* <sub>3</sub>
Theodore Patsellis <sup>1</sup>	108,450	* <sub>3</sub>
Charles Selby <sup>1</sup>	852,913	1.07%
Gerry Sheehan <sup>1</sup>	359,227	* <sub>3</sub>
Jeffrey Tilson <sup>1</sup>	6,146,214	7.73%
Thomas Valentine <sup>1</sup>	332,186	* <sub>3</sub>
Bruce G. Wilcox <sup>1,2</sup>	1,084,621	1.36%
Eugene Woychyshyn <sup>1,2</sup>	1,208,972	1.52%
Total D & O Common Shares	10,592,236	13.24%
<b>Major Shareholders (&gt; 5%):</b>		
Alberta Green Ventures Limited Partnership	6,764,945	8.51%
Ataraxia	13,540,209	14.56%
Chee Pheng Cheng	11,312,152	14.23%
Mork Capital <sup>4</sup>	30,526,321	32.1%

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<sup>1</sup> Director of NXT

<sup>2</sup> Officer of NXT

<sup>3</sup> Beneficially owns less than one percent of the total outstanding common shares.

<sup>4</sup> Mr. Michael Mork controls MCAPM, LP. Mr. Mork owns 2,886,233 common shares included in this total.

<sup>5</sup> For each beneficial owner's percentage of common shares calculation, it is assumed that any stock options, DSUs and convertible debenture that they hold which are, or will become exercisable within 60 days of the date of this 20-F have been exercised (while also assuming that no one else similarly exercises), and such options are thus included in both the numerator and denominator for purposes of each of their own person's calculations as follows:

	Common shares held	vested & exercisable options	Vested DSUs	Convertible debentures, if converted	Pro forma total
Ataraxia	-	-	-	13,540,209	13,540,209
Mork Capital	14,921,233	-	-	15,605,088	30,526,321
Peter Mork	380,237	-	69,416	-	449,653
Theodore Patsellis	-	69,733	-	38,717	108,450
Charles Selby	408,161	308,383	69,997	66,372	852,913
Gerry Sheehan	77,000	33,333	-	248,894	359,227
Jeffrey Tilson	6,118,234	-	27,980	-	6,146,214
Thomas Valentine	-	144,133	-	188,053	332,186
Bruce G. Wilcox	793,667	85,983	27,980	176,991	1,084,621
Eugene Woychysyn	1,056,223	83,333	69,416	-	1,208,972
	23,754,755	724,898	264,789	29,864,324	54,608,766

Major changes in the last 3 years in the percentage ownership of persons who beneficially own (as at the respective December 31, year-end dates) 5% or more of the outstanding common shares of NXT were:

1. Mr. Tilson has acquired common shares on the public markets since he became a director on December 16, 2024.
2. Ataraxia acquired US\$500,000 of convertible debentures on November 4 and US\$400,000 on November 12, 2024 which together may be converted to 3,750,000 preferred or common shares.
3. Mork Capital acquired US\$2,000,000 of convertible debentures on May 31, 2024 which may be converted to 8,000,000 common shares.
4. Mork Capital acquired US\$1,000,000 of convertible debentures on November 8, 2023 and US\$375,000 on January 12, 2024 which together may be converted to 6,605,088 common shares.
5. On March 5, 2024, Ms. Cheng acquired beneficial ownership of 2,000,000 common shares pursuant to the settlement of the Estate of George Liszicasz, the former CEO of NXT, which estate Ms. Cheng is a beneficiary
6. On August 4, 2023 Ms. Cheng acquired beneficial ownership of 11,072,001 common shares pursuant to the settlement of the Estate of George Liszicasz.
7. During 2023 and 2024 Ms. Cheng has sold common shares on the public markets.
8. Ataraxia acquired US\$1,200,000 of convertible debentures on May 31, 2023 and US\$200,000 on July 10, 2023 which together may be converted to 9,790,209 preferred or common shares.
9. Mork Capital acquired 8,750,000 common shares through the Private Placement between December 23, 2022 and January 11, 2023.
10. Mr. Liszicasz entered into a matrimonial settlement dated December 23, 2019 that included the transfer of 1,458,333 NXT common shares to his former spouse on January 19, 2023.

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NXT is a foreign private issuer for its current fiscal year. As of the last business day of the Company's second fiscal quarter, the 50% of the Company's executive officers are Canadian citizens who reside in Canada, the majority of the Company's assets are in Canada and the Company is administered principally in Canada. Three of the eight directors of the Company are Canadian citizens as of the date of this 20-F. The Company's major shareholders in common shares have the same voting rights as other holders of common shares. The Company is not directly or indirectly owned or controlled by another corporation, a foreign government or any other natural or legal persons severally or jointly. There are no arrangements known to the Company which may result in a change of control of the Company.

## **B. Related party transactions.**

Summarized below are certain other transactions and business relationships between NXT and persons who are related parties, for the current fiscal year ended December 31, 2024 through the date of this 20-F:

- Details of stock options, DSUs and RSUs which have been granted to related parties during the above noted period are included with Item 6.E above. No stock options have been exercised by related parties in these periods;
- Details of Board of Director fees and Management Compensation for 2024 are included above with Item 6.B. In 2025, as of the date of this 20-F, total Director fees incurred are approximately \$71,667 and Management Compensation is approximately \$143,446;
- One of the members of NXT's Board, Mr. Thomas Valentine is a partner in the law firm Norton Rose Fulbright, which provides legal advice to NXT. In 2024, NXT incurred legal costs of \$164,373 with this firm, for which a total of \$55,455 is included in accounts payable as at December 31, 2024. Norton Rose Fulbright continues to provide legal services to NXT. In 2025, as of the date of this 20-F, approximate total fees incurred are approximately \$20,359 for which \$11,709 is still outstanding;
- Another member of NXT's Board of Directors is a board member of Pana Holdings Mauritius, the parent company of Ataraxia, which holds the Ataraxia Debentures. Accounts payable and accrued liabilities include a total of \$40,011 (US\$27,814) to Ataraxia and total interest expense was \$209,866 (US\$153,729). Ataraxia continues to hold the Ataraxia Debentures. In 2025, as of the date of this 20-F, total interest expense incurred is approximately \$106,587 (US\$74,356) for which \$57,302 (US\$41,568) is payable;  
A third member of Board is an employee of MCAPM LP, which holds convertible debentures. Accounts payable and accrued liabilities include a total of \$57,063 (US\$39,669) to Mork Capital for accrued interest and total interest expense since July 16, 2024 was \$212,676 (US\$154,918). Mork Capital continues to hold the debentures. In 2025, as of the date of this 20-F, total interest expense incurred is approximately \$156,405 (US\$109,110) for which \$78,861 (US\$57,208) is payable; and
- During 2024 convertible debentures held by members of the Board of Directors included in accounts payable and accrued liabilities, a total of \$4,680 (US\$3,253) and total interest expense was \$19,443 (US\$14,258). As of the date of this 20-F total interest expense incurred in 2025 for the Directors' November Debentures was approximately \$6,812 (US\$4,752) of which \$1,110 (US\$805) was payable.

## **C. Interests of experts and counsel.**

Not applicable.

## **ITEM 8. FINANCIAL INFORMATION**

### **A. Consolidated statements and other financial information.**

The Company's consolidated financial statements are stated in Canadian dollars and are prepared in accordance with U.S. generally accepted accounting principles.

The financial statements and notes thereto as required under Item 8 are attached as Exhibit 15.1 to this annual report and are incorporated by reference herein. The audit reports of MNP LLP ("MNP") and KPMG LLP are included therein immediately preceding the consolidated financial statements and is also incorporated by reference herein.

No significant events or changes have occurred subsequent to the date of the December 31, 2024 consolidated financial statements, except as otherwise disclosed herein Item 8.B.

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## **Legal Proceedings**

To the best of the Company's knowledge, there are no legal or arbitration proceedings existing or pending which have had or may have, significant effects on the Company's financial position or profitability and no such proceedings are pending or known to be contemplated by governmental authorities.

## **Dividend Policy**

The Company does not pay dividends.

## **B. Significant Changes.**

As of the date of this 20-F, three subsequent events have occurred subsequent to the date of consolidated financial statements for the year ended December 31, 2024:

- On February 24, 2025 the Company granted 1,400,000 incentive stock options at a strike price of \$0.203 to directors of the Company. These incentive stock options will vest upon the achieving of a trailing twelve-month free cash flow per share of \$0.10;
- On February 24, 2025 the Company granted 1,875,000 RSUs to employees and officers which will vest over a three-year period; and
- 634,439 common shares were issued to the marketing consultant on January 29, 2025. On October 1, 2023 the Company entered into a service agreement with a marketing consultant to provide sales and market services to introduce potential customers to the SFD® technology, attend trade shows, and update the Company's market systems. The consultant agreed to be compensated in Common Shares only for approximately US\$16,000 per month, based on the five-day volume average price at the end of each month until February 29, 2024.

NXT's interim unaudited consolidated financial statements for the 3-month period ended March 31, 2025 are planned to be released on or before May 15, 2025.

## **ITEM 9. THE OFFER AND LISTING**

### **A. Offer and listing details.**

Our common shares are currently quoted in the U.S. on the OTC Markets QB Exchange under the symbol "NSFDF", in Canada on the TSX under the symbol "SFD". There have been no trading suspensions over the last three years.

### **B. Plan of distribution.**

Not applicable.

### **C. Markets.**

Our common shares are currently quoted in the U.S. on the OTC Markets QB Exchange under the symbol "NSFDF", in Canada on the TSX under the symbol "SFD" effective from March 22, 2016, and in Europe on the Frankfurt and Berlin Exchanges (both of these listings are inactive) under the symbol "EFW".

### **D. Selling shareholders.**

Not applicable.

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**E. Dilution.**

Not applicable.

**F. Expenses of the issue.**

Not applicable.

**ITEM 10. ADDITIONAL INFORMATION**

**A. Share capital.**

Not applicable.

**B. Memorandum and articles of association.**

NXT was incorporated in the State of Nevada in 1994. With respect to the foregoing items, the law applicable to NXT in the Province of Alberta is not significantly different from that in the State of Nevada. NXT was established in Alberta pursuant to a Certificate of Continuance issued October 24, 2003 by the Registrar of Corporations of the Province of Alberta. NXT's Alberta Corporate Access Number is 2010730915. The Articles of Continuance of NXT were amended to create the Series 1 Preferred Shares on December 28, 2006, and provide that there are no restrictions on the nature of the business that may be carried on by NXT. On September 19, 2008, pursuant to Articles of Amendment, the name of the Company was changed from Energy Exploration Technologies Inc. to NXT Energy Solutions Inc. At the Annual Meeting of Shareholders on August 2, 2023 shareholders approved the cancellation of the outstanding Series 1 preferred shares and approve the creation of the Series 2 Preferred Shares to facilitate the conversion of the convertible debentures to be issued under the Ataraxia Subscription Agreement (as defined herein).

**Quorum**

The Board of NXT may fix the quorum for meetings of the Board or of a committee of the Board, but unless so fixed, a majority of the directors or of a committee of directors holding office at the time of the meeting constitutes a quorum provided that no business may be transacted unless at least half of the directors present are resident Canadians. Business cannot be transacted without a quorum. A quorum of directors may vote on any matter of business properly brought before the meeting provided that where a director is a party to a material contract or proposed material contract or is a director or an officer of or has a material interest in any person who is a party to a material contract or proposed material contract with NXT, such director must disclose his or her interest at the earliest possible date, request the conflict be noted in the minutes of the meeting and with few exceptions, refrain from voting on the matter in which the director has a conflict of interest. There is no limitation on the Board to vote on matters of their remuneration as a director, officer, employee or agent of NXT or of an affiliate of NXT.

**Borrowing Powers**

The Board may, without authorization of the shareholders of NXT:

- (a) borrow money on the credit of NXT;
- (b) issue, reissue, sell or pledge debt obligations of NXT;
- (c) subject to restrictions respecting financial assistance prescribed in the ABCA, guarantee, on behalf of NXT, the performance of an obligation of any person; and
- (d) mortgage, hypothecate, pledge or otherwise create a security interest in all or any property of NXT, owned or subsequently acquired, to secure any obligation of NXT.

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The Board of NXT may, by resolution, delegate to a director, a committee of directors or an officer all or any of the foregoing borrowing powers.

### Directors

A person is qualified to be or stand for election as a director provided such person is at least 18 years of age, is not bankrupt and is not mentally incapacitated pursuant to applicable mental health legislation of the Province of Alberta or pursuant to an order of the courts of the Province of Alberta. There is no provision in NXT's Articles or By-Laws relating to the retirement or non-retirement of directors under an age limit requirement. There is also no requirement in NXT's Articles or By-Laws for a director to hold securities of NXT.

Pursuant to the ABCA, a director or officer shall not be disqualified by his office, or be required to vacate his office, by reason only that he is a party to, or is a director or officer or has a material interest in any person who is a party to, a material contract or proposed material contract with NXT or subsidiary thereof. Such a director or officer shall, however, disclose the nature and extent of his interest in the contract at the time and in the manner provided by the ABCA. Any such contract or proposed contract shall be referred to the Board of NXT or shareholders for approval even if such contract is one that in the ordinary course of NXT's business would not require approval by the Board or shareholders. Subject to the provisions of the ABCA, a director shall not by reason only of his office be accountable to NXT or to its shareholders for any profit or gain realized from such a contract or transaction, and such contract or transaction shall not be void or voidable by reason only of the director's interest therein, provided that the required declaration and disclosure of interest is properly made, the contract or transaction is approved by the directors or shareholders, and it is fair and reasonable to NXT at the time it was approved and, if required by the ABCA, the director refrains from voting as a director on the contract or transaction and absents himself from the director's meeting at which the contract is authorized or approved by the directors, except attendance for the purpose of being counted in the quorum.

### Rights Attached to Common Shares

The holders of the common shares are entitled to dividends as and when declared by the directors of NXT, to one vote per share at meetings of shareholders of NXT, and upon liquidation, subject to the rights of the holders of preferred shares, are entitled to share rateably with the holders of the common shares in all distributions of assets of NXT.

### Rights Attached to Preferred Shares

At the Annual Meeting of Shareholders on August 2, 2023 shareholders approved the cancellation of the outstanding Series 1 preferred shares and approve the creation of the Series 2 Preferred Shares to facilitate the conversion of the convertible debentures to be issued under the Ataraxia Subscription Agreement (as defined herein).

Holders of Series 2 Preferred Shares are entitled to receive notice of and to attend and vote at all meetings of NXT (except meetings of holders of another class of shares) and shall be entitled to one vote per Series 2 Preferred Share at any such meeting. Dividends on the Series 2 Preferred Shares may be declared by the Board at the rate of 10% per annum on the sum of the Redemption Price thereof (as defined below). If declared, such dividends shall accrue and compound, and shall be cumulative from the respective date of issuance of the Series 2 Preferred Shares. Upon the liquidation of NXT, the holders of such Series 2 Preferred Shares shall be entitled to receive an amount equal to the redemption price of \$0.143 per Series 2 Preferred Share (the "Redemption Price") before the distribution of any part of the property and assets of NXT to the holders of its common shares. Following the payment of such Redemption Price, the Series 2 Preferred Shares shall be entitled to participate with the holders of common shares then outstanding on a pro rata basis as a single class of shareholders with respect to the distribution of the remaining property and assets of NXT. On written notice, the Series 2 Preferred Shares shall be convertible into common shares of NXT, on a basis of one Preferred Share to one common share. Common shares shall not be convertible into Series 2 Preferred Shares. The Series 2 Preferred Shares shall not be transferred without the prior consent of the Board.

The complete description of the rights, privileges, restrictions and conditions of the Preferred Shares is included in our Articles of Continuance, a copy of which is available through the Company's issuer profile on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

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### Alteration of the Rights of Shareholders

Under the ABCA, any substantive change to the Articles (including, but not limited to, change of any maximum number of shares that NXT is authorized to issue, creation of new classes of shares, add, change or remove any rights, privileges, restrictions and conditions in respect of all or any of its shares, whether issued or unissued, change the shares of any class or series, whether issued or unissued, into a different number of shares of the same class or series or into the same or a different number of shares of other classes or series) or other fundamental changes to the capital structure of NXT, including a proposed amalgamation or continuance of NXT out of the jurisdiction, requires shareholder approval by not less than 2/3 of the votes cast by shareholders voting in person or by proxy at a shareholders' meeting called for that purpose. In certain prescribed circumstances, holders of shares of a class or of a series are entitled to vote separately as a class or series on a proposal to amend the Articles whether or not shares of a class or series otherwise carry the right to vote. The holders of a series of shares of a class are entitled to vote separately as a series only if the series is affected by an amendment in a manner different from other shares of the same class.

### Meetings of Shareholders

NXT's By-Laws provide that the Board shall call an annual meeting of shareholders to be held not later than fifteen months after holding the last preceding annual meeting. NXT's By-Laws provide that the Board may at any time call a special meeting of shareholders. Only the registered holders of shares are entitled to receive notice of and vote at annual and special meetings of shareholders, except to the extent that:

- (a) if a record date is fixed, the person transfers ownership of any of the person's shares after the record date; or
- (b) if no record date is fixed, the person transfers ownership of any of the person's shares after the date on which the list of shareholders is prepared; and
- (c) the transferee of those shares;
  - produces properly endorsed share certificates; or
  - otherwise establishes ownership of the shares; and
  - demands, not later than ten (10) days before the meeting, that the transferee's name be included in the list before the meeting; and
  - in which case the transferee is entitled to vote the shares.

The ABCA also permits the holders of not less than 5% of the issued voting securities of NXT to give notice to the Board requiring them to call and hold a meeting of NXT.

The only persons entitled to be present at a meeting of shareholders are:

- (a) the shareholders entitled to vote at the meeting;
- (b) the Board of NXT;
- (c) the external auditor of NXT; and
- (d) any others who, although not entitled or required under the provisions of the ABCA, any unanimous shareholder agreement, or the Articles or the By-Laws, are allowed to be present at the meeting.

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Any other person may be admitted only on the invitation of the Chairperson of the meeting or with the consent of the meeting.

There are no restrictions in NXT's Articles or By-Laws as to the number of shares that may be held by non-residents other than restrictions set out in the *Investment Canada Act* (the "ICA") (Canada), as further described under Item 10.D – "Exchange Controls" below.

#### Change of Control

There are no specific provisions in the Articles or By-Laws of NXT that have the effect of delaying, deferring or preventing a change of control of NXT and that would operate only with respect to a merger, acquisition or corporate restructuring involving NXT (or any of its subsidiaries). Notwithstanding this, the Board, under the general powers conferred to it under NXT's By-Laws, have the authority to approve and invoke a shareholders rights plan that will protect shareholders from unfair, abusive or coercive take-over strategies, including the acquisition or control of NXT by a bidder in a transaction or series of transactions that does not treat all shareholders equally or fairly or that does not afford all shareholders an equal opportunity to share in any premium paid upon an acquisition of control. NXT has not adopted such a plan.

#### Shareholder Ownership Disclosure

There are no provisions in NXT's By-Laws regarding public disclosure of individual shareholdings.

#### **C. Material contracts.**

Each material contract, other than contracts entered into in the ordinary course of business, to which the Company has been a party, for the two years immediately preceding publication of this annual report, is summarized elsewhere herein. Please see the Letter Agreement: Geothermal Right Item 4.B. Also see Item 3. D for a description of the Sales Leaseback contract.

On May 24, 2023, the Company and Ataraxia entered into the Ataraxia Subscription Agreement.

On May 31, 2023, the Company and Ataraxia entered into an Investor Rights Agreement (the "Investor Rights Agreement") pursuant to which Ataraxia has been granted the right: (i) to nominate one person for election or appointment as a director of the Company; (ii) to have one representative of Ataraxia attend the Company's board of director meetings as an observer (except any portion of a board of director meeting where the Company's relationship with Ataraxia is to be a subject of discussion); (iii) to purchase up to its *pro rata* portion (calculated on a fully diluted basis) of any securities offered by the Company, subject to certain limitations set forth in the Investor Rights Agreement; and (iv) receive certain information regarding the Company, including annual and quarterly financial statements, annual budgets, the capitalization tables, and access to its premises upon reasonable notification. In each case Ataraxia will the rights set forth in the Investor Rights Agreement for so long as Ataraxia holds (i) any principal amount of the Ataraxia Debentures or (ii) common shares or Preferred Shares (as applicable), representing at least 5% of the outstanding common shares of the Company (on an as-converted basis, if Ataraxia holds Preferred Shares).

#### **D. Exchange controls.**

There is no law, governmental decree or regulation in Canada that restricts the export or import of capital, or which would affect the remittance of dividends or other payments by the Company to non-resident holders of Common Shares, other than withholding tax.

#### **E. Taxation.**

##### Certain United States Federal Income Tax Considerations

The following is a general summary of certain material U.S. federal income tax considerations applicable to a U.S. Holder (as defined below) arising from and relating to the acquisition, ownership, and disposition of common shares of the Company.

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This summary is for general information purposes only and does not purport to be a complete analysis or listing of all potential U.S. federal income tax considerations that may apply to a U.S. Holder arising from and relating to the acquisition, ownership and disposition of common shares. In addition, this summary does not take into account the individual facts and circumstances of any particular U.S. Holder that may affect the U.S. federal income tax consequences to such U.S. Holder, including, without limitation, specific tax consequences to a U.S. Holder under an applicable income tax treaty. Accordingly, this summary is not intended to be, and should not be construed as, legal or U.S. federal income tax advice with respect to any particular U.S. Holder. This summary does not address the U.S. federal net investment income tax, U.S. federal alternative minimum tax, U.S. federal estate and gift tax, U.S. state and local tax, and non-U.S. tax consequences to U.S. Holders of the acquisition, ownership and disposition of common shares. In addition, except as specifically set forth below, this summary does not discuss applicable tax reporting requirements. Each prospective U.S. Holder should consult its own tax advisors regarding the U.S. federal, U.S. state and local, and non-U.S. tax consequences relating to the acquisition, ownership and disposition of common shares as discussed in this summary.

No legal opinion from U.S. legal counsel or ruling from the Internal Revenue Service (the “IRS”) has been requested, or will be obtained, regarding the U.S. federal income tax consequences of the acquisition, ownership, and disposition of common shares. This summary is not binding on the IRS and the IRS is not precluded from taking a position that is different from, or contrary to, the positions taken in this summary. In addition, because the authorities on which this summary is based are subject to various interpretations, the IRS and the U.S. courts could disagree with one or more of the conclusions described in this summary.

## **Scope of this Summary**

### Authorities

This summary is based on the U.S. Internal Revenue Code of 1986, as amended (the “Code”), Treasury Regulations (whether final, temporary, or proposed) promulgated there under, published rulings of the IRS, published administrative positions of the IRS, the Convention between Canada and the United States of America with Respect to Taxes on Income and Capital, signed September 26, 1980, as amended (the “Canada-U.S. Tax Convention”), and U.S. court decisions that are applicable, and, in each case, as in effect and available, as of the date of this document. Any of the authorities on which this summary is based could be changed in a material and adverse manner at any time, and any such change could be applied on a retroactive or prospective basis, which could affect the U.S. federal income tax considerations described in this summary. This summary does not discuss the potential effects, whether adverse or beneficial, of any proposed legislation that, if enacted, could be applied on a retroactive or prospective basis.

### U.S. Holders

For purposes of this summary, the term “U.S. Holder” means a beneficial owner of common shares that is for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate whose income is subject to U.S. federal income taxation regardless of its source; or
- a trust that (1) is subject to the primary supervision of a court within the U.S. and the control of one or more U.S. persons for all substantial decisions or (2) has a valid election in effect under applicable Treasury Regulations to be treated as a U.S. person.

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**U.S. Holders Subject to Special U.S. Federal Income Tax Rules Not Addressed**

This summary does not address the U.S. federal income tax considerations applicable to U.S. Holders that are subject to special provisions under the Code, including, but not limited to, U.S. Holders that: (a) are tax-exempt organizations, qualified retirement plans, individual retirement accounts, or other tax-deferred accounts; (b) are financial institutions, underwriters, insurance companies, real estate investment trusts, or regulated investment companies; (c) are broker-dealers, dealers, or traders in securities or currencies that elect to apply a mark-to-market accounting method; (d) have a “functional currency” other than the U.S. dollar; (e) own common shares as part of a straddle, hedging transaction, conversion transaction, constructive sale, or other integrated transaction; (f) acquire common shares in connection with the exercise of employee stock options or otherwise as compensation for services; (g) hold common shares other than as a capital asset within the meaning of Section 1221 of the Code (generally, property held for investment purposes); (h) are subject to the alternative minimum tax; (i) are partnerships or other pass-through entities (and investors in such partnerships or pass-through entities); (j) are S corporations (and shareholders or investors in such S corporations); (k) own, have owned or will own (directly, indirectly, or by attribution) 10% or more of the total combined voting power or value of the outstanding shares of the Company; (l) are U.S. expatriates or former long-term residents of the U.S.; (m) hold common shares in connection with a trade or business, permanent establishment, or fixed base outside the United States; or (n) are subject to special tax accounting rules with respect to the common shares. U.S. Holders that are subject to special provisions under the Code, including, but not limited to, U.S. Holders described immediately above, should consult their own tax advisors regarding the U.S. federal, U.S. state and local, and non-U.S. tax consequences relating to the acquisition, ownership and disposition of common shares.

If an entity or arrangement that is classified as a partnership (or other “pass-through” entity) for U.S. federal income tax purposes holds common shares, the U.S. federal income tax consequences to such entity or arrangement and the partners (or other owners or participants) of such entity or arrangement generally will depend on the activities of the entity or arrangement and the status of such partners (or owners or participants). This summary does not address the tax consequences to any such partner (or owner or participants). Partners (or other owners or participants) of entities or arrangements that are classified as partnerships or as “pass-through” entities for U.S. federal income tax purposes should consult their own tax advisors regarding the U.S. federal income tax consequences arising from and relating to the acquisition, ownership and disposition of common shares.

**Passive Foreign Investment Company Rules**

If the Company were to constitute a “passive foreign investment company” under the meaning of Section 1297 of the Code (a “PFIC”) for any year during a U.S. Holder’s holding period, then certain potentially adverse rules would affect the U.S. federal income tax consequences to a U.S. Holder resulting from the acquisition, ownership and disposition of common shares. The Company believes that it was not a PFIC for its most recently completed tax year and, based on current business plans and financial expectations, the Company does not anticipate that it will be a PFIC for its current tax year. No opinion of legal counsel or ruling from the IRS concerning the status of the Company as a PFIC has been obtained or is currently planned to be requested. However, PFIC classification is fundamentally factual in nature, generally cannot be determined until the close of the tax year in question and is determined annually. Additionally, the analysis depends, in part, on the application of complex U.S. federal income tax rules, which are subject to differing interpretations. In addition, whether any corporation will be a PFIC for any tax year depends on the assets and income of such corporation over the course of each tax year and, as a result, cannot be predicted with certainty as of the date of this document. Accordingly, there can be no assurance that the IRS will not challenge any determination made by the Company (or any subsidiary of the Company) concerning its PFIC status. Each U.S. Holder should consult its own tax advisors regarding the PFIC status of the Company and each subsidiary of the Company.

In addition, in any year in which the Company is classified as a PFIC, a U.S. Holder will be required to file an annual report with the IRS containing such information as Treasury Regulations and/or other IRS guidance may require. A failure to satisfy such reporting requirements may result in an extension of the time period during which the IRS can assess a tax. U.S. Holders should consult their own tax advisors regarding the requirements of filing such information returns under these rules, including the requirement to file an IRS Form 8621 annually.

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The Company generally will be a PFIC under Section 1297 of the Code if, after the application of certain “look-through” rules with respect to subsidiaries in which the Company holds at least 25% of the value of such subsidiary, for a tax year, (a) 75% or more of the gross income of the Company for such tax year is passive income (the “income test”) or (b) 50% or more of the value of the Company’s assets either produce passive income or are held for the production of passive income (the “asset test”), based on the quarterly average of the fair market value of such assets. “Gross income” generally includes all sales revenues less the cost of goods sold, plus income from investments and incidental or outside operations or sources, and “passive income” generally includes, for example, dividends, interest, certain rents and royalties, certain gains from the sale of stock and securities, and certain gains from commodities transactions. Active business gains arising from the sale of commodities generally are excluded from passive income if substantially all of a foreign corporation’s commodities are stock in trade or inventory, depreciable property used in a trade or business or supplies regularly used or consumed in the ordinary course of its trade or business, and certain other requirements are satisfied.

If the Company were a PFIC in any tax year during which a U.S. Holder held common shares, such U.S. Holder generally would be subject to special rules with respect to “excess distributions” made by the Company on the common shares and with respect to gain from the disposition of common shares. An “excess distribution” generally is defined as the excess of distributions with respect to the common shares received by a U.S. Holder in any tax year over 125% of the average annual distributions such U.S. Holder has received from the Company during the shorter of the three preceding tax years, or such U.S. Holder’s holding period for the common shares. Generally, a U.S. Holder would be required to allocate any excess distribution or gain from the disposition of the common shares ratably over its holding period for the common shares. Such amounts allocated to the year of the disposition or excess distribution would be taxed as ordinary income, and amounts allocated to prior tax years would be taxed as ordinary income at the highest tax rate in effect for each such year and an interest charge at a rate applicable to underpayments of tax would apply.

While there are U.S. federal income tax elections that sometimes can be made to mitigate these adverse tax consequences (including the “QEF Election” under Section 1295 of the Code and the “Mark-to-Market Election” under Section 1296 of the Code), such elections are available in limited circumstances and must be made in a timely manner.

U.S. Holders should be aware that, for each tax year, if any, that the Company is a PFIC, the Company can provide no assurances that it will satisfy the record-keeping requirements of a PFIC, or that it will make available to U.S. Holders the information such U.S. Holders require to make a QEF Election with respect to the Company or any subsidiary that also is classified as a PFIC.

Certain additional adverse rules may apply with respect to a U.S. Holder if the Company is a PFIC, regardless of whether the U.S. Holder makes a QEF Election. These rules include special rules that apply to the amount of foreign tax credit that a U.S. Holder may claim on a distribution from a PFIC. Subject to these special rules, foreign taxes paid with respect to any distribution in respect of stock in a PFIC are generally eligible for the foreign tax credit. U.S. Holders should consult their own tax advisors regarding the potential application of the PFIC rules to the ownership and disposition of shares, and the availability of certain U.S. tax elections under the PFIC rules.

### **General Rules Applicable to the Ownership and Disposition of Common Shares**

The following discussion describes the general rules applicable to the ownership and disposition of the common shares but is subject in its entirety to the special rules described above under the heading “Passive Foreign Investment Company Rules.”

#### Distributions on Common Shares

A U.S. Holder that receives a distribution, including a constructive distribution, with respect to a common share will be required to include the amount of such distribution in gross income as a dividend (without reduction for any Canadian income tax withheld from such distribution) to the extent of the current and accumulated “earnings and profits” of the Company, as computed for U.S. federal income tax purposes. A dividend generally will be taxed to a U.S. Holder at ordinary income tax rates if the Company is a PFIC for the tax year of such distribution or the preceding tax year. To the extent that a distribution exceeds the current and accumulated “earnings and profits” of the Company, such distribution will be treated first as a tax-free return of capital to the extent of a U.S. Holder’s tax basis in the common shares and thereafter as gain from the sale or exchange of such common shares. (See “Sale or Other Taxable Disposition of Common Shares” below). However, the Company may not maintain the calculations of its earnings and profits in accordance with U.S. federal income tax principles, and each U.S. Holder may have to assume that any distribution by the Company with respect to the common shares will constitute ordinary dividend income. Dividends received on common shares by corporate U.S. Holders generally will not be eligible for the “dividends received deduction.” Subject to applicable limitations and provided the Company is eligible for the benefits of the Canada-U.S. Tax Convention, dividends paid by the Company to non-corporate U.S. Holders, including individuals, generally will be eligible for the preferential tax rates applicable to long-term capital gains for dividends, provided certain holding period and other conditions are satisfied, including that the Company not be classified as a PFIC in the tax year of distribution or in the preceding tax year. The dividend rules are complex, and each U.S. Holder should consult its own tax advisors regarding the application of such rules.

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**Sale or Other Taxable Disposition of Common Shares**

Upon the sale or other taxable disposition of common shares, a U.S. Holder generally will recognize capital gain or loss in an amount equal to the difference between the U.S. dollar value of cash received plus the fair market value of any property received and such U.S. Holder's tax basis in such common shares sold or otherwise disposed of. A U.S. Holder's tax basis in common shares generally will be such holder's U.S. dollar cost for such common shares. Gain or loss recognized on such sale or other disposition generally will be long-term capital gain or loss if, at the time of the sale or other disposition, the common shares have been held for more than one year.

Preferential tax rates currently apply to long-term capital gain of a U.S. Holder that is an individual, estate, or trust. There are currently no preferential tax rates for long-term capital gain of a U.S. Holder that is a corporation. Deductions for capital losses are subject to significant limitations under the Code.

**Additional Considerations**

**Receipt of Foreign Currency**

The amount of any distribution paid to a U.S. Holder in foreign currency, or payment received on the sale, exchange or other taxable disposition of common shares, generally will be equal to the U.S. dollar value of such foreign currency based on the exchange rate applicable on the date of receipt or, if applicable, the date of settlement if the common shares are traded on an established securities market (regardless of whether such foreign currency is converted into U.S. dollars at that time). If the foreign currency received is not converted into U.S. dollars on the date of receipt, a U.S. Holder will have a basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any U.S. Holder who receives payment in foreign currency and engages in a subsequent conversion or other disposition of the foreign currency after the date of receipt may have a foreign currency exchange gain or loss that would be treated as ordinary income or loss, and generally will be U.S. source income or loss for foreign tax credit purposes. Different rules apply to U.S. Holders who use the accrual method of tax accounting. Each U.S. Holder should consult its own U.S. tax advisors regarding the U.S. federal income tax consequences of receiving, owning, and disposing of foreign currency.

**Foreign Tax Credit**

Dividends paid on the common shares will be treated as foreign-source income, and generally will be treated as "passive category income" or "general category income" for U.S. foreign tax credit purposes. Any gain or loss recognized on a sale or other disposition of common shares generally will be United States source gain or loss. Certain U.S. Holders that are eligible for the benefits of the Canada-US Tax Convention may elect to treat such gain or loss as Canadian source gain or loss for U.S. foreign tax credit purposes. The Code applies various complex limitations on the amount of foreign taxes that may be claimed as a result by U.S. taxpayers. In addition, Treasury Regulations that apply to taxes paid or accrued (the "Foreign Tax Credit Regulations") impose additional requirements for Canadian withholding taxes to be eligible for a foreign tax credit, and there can be no assurance that those requirements will be satisfied. The Treasury Department has released guidance temporarily pausing the application of certain of the Foreign Tax Credit Regulations.

Subject to the PFIC rules and the Foreign Tax Credit Regulations, each as discussed above, a U.S. Holder that pays (whether directly or through withholding) Canadian income tax with respect to dividends paid on the common shares generally will be entitled, at the election of such U.S. Holder, to receive either a deduction or a credit for such Canadian income tax paid. Generally, a credit will reduce a U.S. Holder's U.S. federal income tax liability on a dollar-for-dollar basis, whereas a deduction will reduce a U.S. Holder's income subject to U.S. federal income tax. This election is made on a year-by-year basis and applies to all foreign taxes paid or accrued (whether directly or through withholding) by a U.S. Holder during a year. The foreign tax credit rules are complex and involve the application of rules that depend on a U.S. Holder's particular circumstances. Accordingly, each U.S. Holder should consult its own U.S. tax advisors regarding the foreign tax credit rules.

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**Backup Withholding and Information Reporting**

Under U.S. federal income tax law and Treasury Regulations, certain categories of U.S. Holders must file information returns with respect to their investment in, or involvement in, a foreign corporation. For example, U.S. return disclosure obligations (and related penalties) are imposed on individuals who are U.S. Holders that hold certain specified foreign financial assets in excess of certain threshold amounts. The definition of specified foreign financial assets includes not only financial accounts maintained in foreign financial institutions, but also, unless held in accounts maintained by a financial institution, any stock or security issued by a non-U.S. person, any financial instrument or contract held for investment that has an issuer or counterparty other than a U.S. person and any interest in a non-U.S. entity. U.S. Holders may be subject to these reporting requirements unless their common shares are held in an account at certain financial institutions. Penalties for failure to file certain of these information returns are substantial. U.S. Holders should consult with their own tax advisors regarding the requirements of filing information returns, including the requirement to file an IRS Form 8938.

Payments made within the U.S., or by a U.S. payer or U.S. middleman, of dividends on, and proceeds arising from the sale or other taxable disposition of, common shares will generally be subject to information reporting and backup withholding tax, currently at the rate of 24%, if a U.S. Holder (a) fails to furnish such U.S. Holder's correct U.S. taxpayer identification number (generally on IRS Form W-9), (b) furnishes an incorrect U.S. taxpayer identification number, (c) is notified by the IRS that such U.S. Holder has previously failed to properly report items subject to backup withholding tax, or (d) fails to certify, under penalty of perjury, that such U.S. Holder has furnished its correct U.S. taxpayer identification number and that the IRS has not notified such U.S. Holder that it is subject to backup withholding tax. However, certain exempt persons, such as U.S. Holders that are corporations, generally are excluded from these information reporting and backup withholding rules. Backup withholding is not an additional tax. Any amounts withheld under the U.S. backup withholding tax rules will be allowed as a credit against a U.S. Holder's U.S. federal income tax liability, if any, or will be refunded, if such U.S. Holder furnishes required information to the IRS in a timely manner.

The discussion of reporting requirements set forth above is not intended to constitute a complete description of all reporting requirements that may apply to a U.S. Holder. A failure to satisfy certain reporting requirements may result in an extension of the time period during which the IRS can assess a tax and, under certain circumstances, such an extension may apply to assessments of amounts unrelated to any unsatisfied reporting requirement. Each U.S. Holder should consult its own tax advisors regarding the information reporting and backup withholding rules.

THE ABOVE SUMMARY IS NOT INTENDED TO CONSTITUTE A COMPLETE ANALYSIS OF ALL TAX CONSIDERATIONS APPLICABLE TO U.S. HOLDERS WITH RESPECT TO THE ACQUISITION, OWNERSHIP, AND DISPOSITION OF COMMON SHARES. U.S. HOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS AS TO THE TAX CONSIDERATIONS APPLICABLE TO THEM IN LIGHT OF THEIR OWN PARTICULAR CIRCUMSTANCES.

**F. Dividends and paying agents.**

Not applicable.

**G. Statement by experts.**

Not applicable.

**H. Documents on display.**

We will furnish our shareholders with annual reports, which will include a review of operations and annual audited consolidated financial statements prepared in conformity with U.S. GAAP. We intend, although we are not obligated to do so, to furnish when requested by our shareholders quarterly reports by mail with the assistance of a corporate services provider, which will include unaudited interim financial information prepared in conformity with U.S. GAAP for each of the three quarters of each fiscal year following the end of each such quarter. We may discontinue providing quarterly reports at any time without prior notice to our shareholders. For additional information on the Company, please consult our website at [www.nxtenergy.com](http://www.nxtenergy.com), or the SEDAR+ website at <http://www.sedarplus.ca>.

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Our reports and other information, including this annual report and the exhibits hereto, as filed with the SEC in accordance with the Exchange Act, may be inspected and copied at the public reference facilities maintained by the SEC at 100 F Street, Washington, D.C. 20549. In addition, copies of such reports and other information filed with the SEC can be obtained from [www.sec.gov](http://www.sec.gov).

**J. ANNUAL REPORT TO SECURITY HOLDERS.**

Not applicable.

**ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

As at December 31, 2024 and to date in 2025, we do not have any variable interest-bearing debt facilities. We have fixed interest-bearing debt facilities with the HASCAP Loan, the 2024 Debentures, the Ataraxia Debentures, and the November Debentures (See Item 5B.). As at December 31, 2024 and to date in 2025 we do not have any forward/futures hedging contracts in place to manage risks related to foreign currency or interest rate fluctuations.

Currency Fluctuations

The Company is exposed to foreign exchange risk in relation to its holding of significant US\$ balances in cash and cash equivalents, accounts receivable, deposits, accounts payables, accrued liabilities, deferred revenue, convertible debentures, and lease obligations, and entering into SFD® survey contracts which are priced in US\$. The Company does not currently enter into hedging contracts, but to mitigate exposure to fluctuations in foreign exchange the Company uses strategies to reduce the volatility of United States Dollar assets including converting excess United States dollars to Canadian dollars. As at December 31, 2024, the Company held net United States dollar liabilities totaling approximately US\$7,130,144. Accordingly, a hypothetical 10% change in the value of one United States dollar expressed in Canadian dollars as at December 31, 2024 would have had an approximately \$1,025,671 effect on the unrealized foreign exchange gain or loss for the year.

Interest Fluctuations

We periodically invest available cash in short-term investments that generate interest income that will be affected by any change in interest rates. At December 31, 2024 there were no short-term investments held by the Company. The Company's long-term debt interest is fixed at 4% until 2031 and the 2024 Debentures, the November Debentures and the Ataraxia Debentures carry an interest rate of 10% until their maturity date which, in the case of each such convertible debentures, is two years after issuance. Any refinancing of the convertible debentures, or new debt financing could result in a significantly different interest rate. We currently do not have any variable interest rate debt.

We caution that the factors referred to above and those referred to as part of particular forward-looking statements may not be exhaustive and that new risk factors emerge from time to time in our rapidly changing business environment.

**ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES**

Not applicable.

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## PART II

### ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

There have not been any defaults, dividend arrears or delinquencies.

### ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

There have been no material modifications to the rights of security holders except as outlined in Item 4.B “Summary information on dependence on patents, licenses and contracts” within this Form 20-F.

### ITEM 15. CONTROLS AND PROCEDURES

#### Disclosure Controls and Procedures

We maintain a set of disclosure controls and procedures (“DCP”) designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms. Disclosure controls and procedures include controls and procedures designed to ensure that information required to be disclosed in our reports is accumulated and communicated to management, to allow timely decisions regarding required disclosure. As discussed below, the Responsible Officers (as defined below) concluded that, as at December 31, 2024, its DCPs are not effective.

#### Management’s Annual Report on Internal Control Over Financial Reporting

The Company’s CEO and CFO, together the “Responsible Officers”, are responsible for establishing and maintaining DCP, or causing them to be designed under their supervision, for NXT to provide reasonable assurance that material information relating to the Company is made known to the Responsible Officers by others within the organization, particularly during the period in which the Company’s quarterly and year-end consolidated financial statements, Form 20-F and Management Discussion and Analysis are being prepared.

As of December 31, 2024, we carried out an evaluation, under the supervision and with the participation of our management, including our Responsible Officers, of the effectiveness of the design and operation of the Company’s DCP as defined under the rules adopted by the Canadian securities regulatory authorities and in Rule 13a-15(e) of the Exchange Act. The evaluation concluded that there are material weaknesses in the Company’s ICFR that have a direct impact on the Company’s DCP as discussed in more detail below.

Our management, under the supervision of the Responsible Officers, is also responsible for establishing and maintaining adequate internal control over financial reporting (“ICFR”) as defined in Rule 13a-15(f) of the Exchange Act. Our internal control system was designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation and fair presentation of our consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Our Responsible Officers assessed the effectiveness of our ICFR as of December 31, 2024. In making this assessment, they used the criteria established in *Internal Control – Integrated Framework 2013*, issued by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control (“COSO”).

Our ICFR were not required to be independently audited. Accordingly, no independent audit was performed over the effectiveness of internal controls as at December 31, 2024 and this annual report does not include an attestation report of the Company’s registered public accounting firm regarding ICFR. Management’s report was not subject to attestation by the Company’s registered public accounting firm pursuant to rules of the SEC that permit the Company to provide only management’s report in this annual report.

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During this process, we identified the following material weaknesses in the Company's ICFR that have a direct impact on the Company's DCP:

- due to the limited number of staff, it is not feasible to achieve adequate segregation of incompatible duties. NXT partially mitigates this deficiency by adding management and Audit Committee review procedures over the areas where inadequate segregation of duties are of the greatest concern; and
- NXT does not have a sufficient level of staff with specialized expertise to adequately conduct separate preparation and a subsequent independent review of certain complex or highly judgmental accounting issues. NXT partially mitigates this deficiency by preparing financial statements with their best judgments and estimates of the complex accounting matters, and relies on reviews by management, external consultants, and the Audit Committee.

From time to time to reduce these risks and to supplement a small corporate finance function, the Company engages various outside experts and advisors to assist with various accounting, controls and tax issues in the normal course. Given the small size of the Company's finance team, management has established a practice of increased engagement of the Company's Disclosure Committee and Audit Committee in reviewing the public disclosure and has increased the engagement of external consultants and legal counsel as well.

The Responsible Officers concluded that, as at December 31, 2024, its ICFR is not effective and as a result its DCPs are not sufficiently effective. NXT reached this conclusion based upon its assessment that there is a more than remote likelihood that its ICFR will not prevent or detect material misstatements if they should exist in the Company's consolidated financial statements. The Responsible Officers continue to take certain actions to mitigate these material weaknesses including: (i) the implementation of controls with regards to the review procedures surrounding its disclosure; and (ii) engagement of third-party specialists. In addition, the CFO engages subject matter consultants as the need arises.

#### Changes in Internal Controls

There were no changes to the Company's ICFR in 2024.

It should be noted that a control system, including the Company's DCPs and ICFR, no matter how well conceived, can provide only reasonable, but not absolute assurance that the objectives of the control system will be met, and it should not be expected that the DCPs and ICFR will prevent all errors or fraud.

There were no other changes in our internal control over financial reporting that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting during the period ended December 31, 2024.

#### **ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT**

Our Board has determined that we have at least one audit committee "financial expert" (as defined under Item 16.A of Form 20-F) serving on our Audit Committee. The Audit Committee consists of Messrs. Selby (Chair), Tilson, and Patsellis. All members of the NXT Audit Committee has relevant experience in understanding and evaluating financial information, generally accepted accounting principles, control systems and audit committee functions. They are considered financial experts, and all are "independent" directors, as that term is defined under the listing standards of NASDAQ.

#### **ITEM 16B. CODE OF ETHICS**

NXT has in place a Code of Conduct & Business Ethics (the "Code of Conduct") that applies to all of our directors, officers, employees, and consultants. This Code of Conduct is incorporated in our Employee Handbook, is an integral part of our employee contracts and our Employee Handbook and contains Company policies on Business Ethics, Employee Practices and Conflicts of Interest.

During 2024, the Company did not significantly amend its Code of Conduct or grant any waiver, including any implicit waiver, from any provision of the Code of Conduct to any of its directors, officers or employees. Copies of NXT's Code of Conduct are available without charge to any person upon request from NXT's Chief Financial Officer at [nxt\\_info@nxtenergy.com](mailto:nxt_info@nxtenergy.com) or at NXT's headquarters at Suite 302, 3320 – 17<sup>th</sup> Avenue SW, Calgary Alberta, Canada, T3E 0B4, and on the Company website, [www.nxtenergy.com](http://www.nxtenergy.com).

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**ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

The following table sets forth the aggregate audit fees, audit-related fees, tax fees of our principal accountants and all other fees billed for products and services provided by our principal accountants for each of the fiscal years ended December 31, 2024, 2023 and 2022.

	2024	2023	2022
Audit fees <sup>1</sup>	\$ 260,010	\$ 261,803	\$ 407,670
Audit-related fees	-	-	-
Tax fees <sup>2</sup>	-	-	12,273
Total fees	260,010	261,803	419,943

<sup>1</sup>. Aggregate of fees for audit of annual financial statements, review of quarterly financial statements and consent letters.

<sup>2</sup>. Fees for reviewing annual tax returns and foreign jurisdiction tax compliance.

**Audit Committee's Pre-approval Policies and Procedures**

Our Audit Committee nominates and engages our independent auditors to audit our financial statements. Our Audit Committee also requires management to obtain the Audit Committee's approval on a case-by-case basis before engaging our independent auditors to provide any audit or permitted non-audit services to the Company or any of our subsidiaries. All fees shown have been pre-approved by the Audit Committee.

**ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES**

Not applicable.

**ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS**

Not applicable.

**ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT**

On April 25, 2023, KPMG LLP ("KPMG"), which was serving as NXT's Principal Accountant, informed NXT that it had declined to stand for reappointment as NXT's independent auditor for the audit of the fiscal year ended December 31, 2023. The resignation of the Predecessor Auditor was considered and approved by the Audit Committee and the Board of Directors of the Company. There is no dispute between NXT and KPMG and KPMG performed the interim review services for NXT in connection with the Company's fiscal quarter ended March 31, 2023.

KPMG's report on the Company's financial statements for the fiscal year ended December 31, 2022 did not contain an adverse opinion or a disclaimer of opinion, and was not qualified or modified as to uncertainty, audit scope or accounting principles, except as follows: KPMG LLP's report on the consolidated financial statements of NXT for the year ended December 31, 2022 contained a separate paragraph stating that "As discussed in Note 1 to the consolidated financial statements, the Company's current and forecasted cash and cash equivalents position are not expected to be sufficient to meet its obligations which raises substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty."

During the 2022 fiscal year of the Company, and through the date of this annual report on Form 20-F, there has not been any disagreement over any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedures, which disagreements, if not resolved to KPMG's satisfaction, would have caused it to make reference to the subject matter of the disagreements in their report, or any "reportable event" as that term is defined in Item 16F(a)(1)(v) of Form 20-F except for the material weakness in the Company's internal controls over financial reporting disclosed in Item 15 of the Company's Form 20-F for the fiscal year ended December 31, 2022. The material weaknesses relating to the effectiveness of internal controls have not been remediated as of the date of this Form 20-F.

The Company has provided KPMG with a copy of the foregoing disclosure and has requested and received from KPMG a letter addressed to the SEC stating whether they agree with the above statements.

MNP LLP was appointed auditor of the Company as of the fiscal year ended December 31, 2023 at the annual meeting of shareholders on August 2, 2023.

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**ITEM 16G. CORPORATE GOVERNANCE**

Not applicable.

**ITEM 16H. MINE SAFETY DISCLOSURE**

Not applicable.

**ITEM 16I – DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS**

Not applicable.

**ITEM 16J – INSIDER TRADING POLICIES**

NXT has adopted an insider trading policy. NXT's insider trading policy is contained in its code of ethics. The policy governs the purchase, sale, and other dispositions of the registrant's securities by directors, senior management, and employees that are reasonably designed to promote compliance with applicable insider trading laws, rules and regulations, and any listing standards applicable to NXT.

The trading of NXT stock and other NXT securities in the market by an insider, based upon material, non-public information, or by others who have acquired material, non-public information by any means, is prohibited and subjects the user of such information to legal risks, including civil or even criminal penalties.

Material information is any information that an independent investor might consider important in deciding whether to buy, sell or hold securities of NXT. Such information includes financial results; financial forecasts; changes in dividends; possible mergers, acquisitions, divestitures or joint ventures; and information concerning significant discoveries, important product developments, major litigation developments, and major changes in business directions.

Insiders may not buy or sell NXT stock until a "reasonable time" (defined as a minimum of 2 full business days) has passed after the information has been disclosed to the public via a press release that is issued by NXT on a newswire service.

A blackout period prohibiting any Insider trading is imposed by NXT when material information has not been disclosed to the public. Examples include the period of time prior to the public release of scheduled quarterly and year-end financial results on SEDAR+ and prior to news releases related to other material information.

Material information is considered to be non-public unless it has been adequately disclosed to the public by way of public filings with securities regulatory authorities (such as SEDAR+ in Canada, and EDGAR in the USA) or issuance of Company press releases.

All insiders must exercise caution not to disclose material information to outsiders, either intentionally or inadvertently, under any circumstances. NXT policy forbids giving confidential information about the Company to outsiders except under limited circumstances as approved by legal counsel.

The Insider Trading Policy is filed as Exhibit 11.2 to this Form 20-F.

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## ITEM 16K – CYBERSECURITY

The Company recognizes the importance of cybersecurity in protecting our intellectual property, operations, and data. The Company's cybersecurity risk management processes are integral to our risk management framework. We conduct regular cybersecurity risk analysis to identify potential threats and vulnerabilities within our IT infrastructure, applications, and operational procedures. We have implemented and maintain various information security processes and software designed to identify, assess and manage material cybersecurity threats to our computer networks, third party hosted services, communications systems, hardware/software, customer/internal data, intellectual property and confidential information.

Our IT department helps identify, assess and manage our cybersecurity threats and risks by monitoring and evaluating our threat environment using various methods including, for example, manual tools, automated tools, analyzing reports of threats from credible third parties such as Microsoft and the Canadian Centre for Cyber Security, conducting scans of the network footprint and authentication methods. We implement and maintain various technical, physical, and organizational measures, processes, standards and policies designed to manage and mitigate material risks from cybersecurity threats to our Information Systems and Data such as disaster recovery/business continuity plans, network security controls, data segregation, access controls, physical security, systems monitoring and employee training.

We integrate cybersecurity risk considerations into our planning processes, ensuring that potential impacts on our business operations, reputation, and financial condition are adequately assessed and mitigated. Our contracts with third-party providers include specific security requirements and obligations to protect our data and systems. We acquire appropriate liability coverage to cover potential losses from a cybersecurity breach.

Our cybersecurity risk assessment and management processes are implemented and maintained by our CFO and our IT Manager who conduct regular briefing with our staff for education and compliance. The Company's board of directors plays a crucial role in overseeing our company's cybersecurity posture including receiving periodic updates on cybersecurity matters from our IT Manager.

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**PART III**

**ITEM 17. FINANCIAL STATEMENTS**

The Company's consolidated financial statements and related notes are prepared in accordance with U.S. generally accepted accounting principles and included in Item 18 to this annual report.

**ITEM 18. FINANCIAL STATEMENTS**

The Company's consolidated financial statements and related notes for the years ended December 31, 2024, 2023 and 2022, together with the reports of MNP LLP, Chartered Professional Accountants and KPMG LLP (Exhibit 15.1), have been prepared in accordance with U.S. generally accepted accounting principles and are attached as exhibit 15.1 hereto and are incorporated into the annual report.

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**ITEM 19. EXHIBITS** [note: remember that this need to be hyperlinked to previously posted docs.]**EXHIBIT INDEX**

<b>Exhibit No.</b>	<b>Description</b>
1.1	Articles of Incorporation of Auric Mining Corporation as filed with the Nevada Secretary of State on September 27, 1994 (incorporated by reference to Exhibit 3.1 to the Registration Statement on Form 10 filed on June 29, 1998)
1.2	Amendment to Articles of Incorporation of Auric Mining Corporation as filed with the Nevada Secretary of State on February 23, 1996 (incorporated by reference to Exhibit 3.1 to the Registration Statement on Form 10 filed on June 29, 1998)
1.3	Certificate of Amendment to Articles of Incorporation of Pinnacle Oil International, Inc. as filed with the Nevada Secretary of State on April 1, 1998 (incorporated by reference to Exhibit 3.3 to the Registration Statement on Form 10 filed on June 29, 1998)
<a href="#">1.4</a>	<a href="#">Certificate of Amendment to Articles of Incorporation of Pinnacle Oil International, Inc. as filed with the Nevada Secretary of State on June 13, 2000 (incorporated by reference to Exhibit 3.4 to our Amendment No. 1 to the Annual Report on Form 10-K for the year ended December 31, 1999 as filed on July 28, 2000).</a>
<a href="#">1.5</a>	<a href="#">Articles of Amendment of Energy Exploration Technologies Inc. as filed with the province of Alberta, Canada on September 22, 2008 (incorporated by reference to Exhibit 1.8 to our Annual Report on Form 20-F for the year ended December 31, 2008 as filed on June 29, 2009).</a>
<a href="#">1.6</a>	<a href="#">Amendment to the Articles of NXT Energy Solutions Inc. (incorporated by reference to Item V of Exhibit 99.1 to Form 6-K as filed on September 20, 2013)</a>
<a href="#">1.7</a>	<a href="#">NXT Energy Solutions Inc. By-Law No. 1 (incorporated by reference to Schedule “D” to Exhibit 99.2 to Form 6-K as filed on September 20, 2013)</a>
<a href="#">2.1</a>	<a href="#">Description of Securities</a>
<a href="#">4.1</a>	<a href="#">Form of Indemnification Agreement between NXT Energy Solutions Inc. and each of its Directors and Executive Officers (incorporated by reference to Exhibit 4.6 to our Annual Report on Form 20-F for the year ended December 31, 2013 as filed on April 30, 2014)</a>
<a href="#">4.2</a>	<a href="#">SFD<sup>®</sup> Technology Ownership Agreement dated December 31, 2006 (incorporated by reference to Exhibit 99.4 to Form 6-K as filed on January 12, 2007)</a>
<a href="#">4.3</a>	<a href="#">Technology Transfer Agreement dated December 31, 2006 (incorporated by reference to Exhibit 99.6 to Form 6-K as filed on January 12, 2007)</a>
<a href="#">4.4</a>	<a href="#">Letter Agreement: Geothermal Applications for SFD Technology dated April 18, 2021 (incorporated by reference to Exhibit 99.1 to Form 6-K as filed on May 4, 2021)</a>
<a href="#">4.5</a>	<a href="#">Stock Option Plan</a>
5.1	Ataraxia Convertible Debenture Subscription Agreement
5.2	Ataraxia Investor Rights Agreement
<a href="#">8.1</a>	<a href="#">List of Subsidiaries (incorporated by reference to Exhibit 8.1 to our Annual Report on Form 20-F for the year ended December 31, 2013 as filed on April 30, 2014)</a>
<a href="#">11.1</a>	<a href="#">Code of Conduct and Business Ethics (incorporated by reference to Exhibit 11.1 to our Annual Report on Form 20-F for the year ended December 31, 2013 as filed on April 30, 2014)</a>
<a href="#">11.2</a>	<a href="#">Insider Trading Policy</a>

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<b>Exhibit No.</b>	<b>Description</b>
<a href="#"><u>12.1</u></a>	<a href="#"><u>Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer</u></a>
<a href="#"><u>12.2</u></a>	<a href="#"><u>Rule 13a-14(a)/15d-14(a) Certification of VP Finance and Chief Financial Officer</u></a>
<a href="#"><u>13.1</u></a>	<a href="#"><u>Section 1350 Certification of Chief Executive Officer</u></a>
<a href="#"><u>13.2</u></a>	<a href="#"><u>Section 1350 Certification of VP Finance and Chief Financial Officer</u></a>
<a href="#"><u>15.1</u></a>	<a href="#"><u>Consolidated Financial Statements and Audit report of MNP LLP for the years ended December 31, 2024 and 2023 and Audit report of KPMG LLP for the year ended December 31, 2022</u></a>
<a href="#"><u>15.2</u></a>	<a href="#"><u>Consent of MNP LLP</u></a>
<a href="#"><u>15.3</u></a>	<a href="#"><u>Management's Discussion and Analysis for the year ended December 31, 2024</u></a>
15.4	Management's Discussion and Analysis for the year ended December 31, 2023
<a href="#"><u>15.5</u></a>	<a href="#"><u>Consent of KPMG LLP</u></a>
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File

# Indicates management contract or compensatory plan.

*20-F for the year ended December 31, 2024*

## SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

NXT Energy Solutions Inc.

By: "/s/ Bruce G. Wilcox"

**Bruce G. Wilcox**

Director and Chief Executive Officer

Dated: April 29 2025

*20-F for the year ended December 31, 2024*



**NXT ENERGY SOLUTIONS INC.**

**Consolidated Financial Statements  
For the Years ended  
December 31, 2024, 2023 and 2022**

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## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of NXT Energy Solutions Inc.

### Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of NXT Energy Solutions Inc. (the “Company”) as at December 31, 2024 and 2023, and the related consolidated statements of loss and comprehensive loss, cash flows and shareholders’ equity deficit for each of the years in the two-year period ended December 31, 2024, and the related notes and schedules (collectively referred to as the consolidated financial statements).

In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as at December 31, 2024 and 2023, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2024, in conformity with accounting principles generally accepted in the United States of America (“US GAAP”).

We have also audited the adjustments to provide additional disclosures of board of directors fees and management compensation expense in Note 22 to the 2022 consolidated financial statements. In our opinion, such adjustments are appropriate and have been properly applied. We were not engaged to audit, review, or apply any procedures to the 2022 consolidated financial statements of the Company other than with respect to the adjustments and, accordingly, we do not express an opinion or any other form of assurance on the 2022 consolidated financial statements taken as a whole.

The consolidated statements of loss and comprehensive loss, cash flows and shareholders’ equity of the Company for the year ended December 31, 2022, were audited by other auditors whose report dated March 31, 2023, expressed an unqualified opinion on those consolidated financial statements.

### Material Uncertainty Related to Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company’s current cash position is not expected to be sufficient to meet the Company’s obligations and planned operations for a year beyond the date of auditor’s report, unless additional financing is obtained or new revenue contracts are completed. This raises substantial doubt about the Company’s ability to continue as a going concern. Management’s plans regarding these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

### Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

### Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

### MNP LLP

Suite 2000, 112 - 4th Avenue SW, Calgary AB, T2P 0H3

1.877.500.0792 T: 403.263.3385 F: 403.269.8450

## ***Going Concern***

### ***Critical Audit Matter Description***

As described in Note 1 to the consolidated financial statements, the Company's current cash position is not expected to be sufficient to meet the Company's obligations and planned operations for a year beyond the date that these consolidated financial statements have been issued, unless additional financing is obtained or new revenue contracts are completed.

We identified the assessment of the ability of the Company to continue as a going concern as a critical audit matter due to the significant assumptions and judgements made by management in estimating future cash flows, which are subject to high degree of uncertainty.

This matter is also described in the "Material Uncertainty Related to Going Concern" section of our report.

### ***Audit Response***

We responded to this matter by performing procedures in relation to the assessment of the ability of the Company to continue as a going concern. Our audit work in relation to this included, but was not restricted to, the following:

- Obtaining an understanding from management on the Company's future plans for the operations, including financing arrangements.
- Evaluating the key assumptions used in management's model to estimate future cash flows by comparing assumptions used by management against historical performance, budgets, economic and industry indicators and publicly available information.
- Comparing the assumptions related to revenue projections to those used in assessments of impairment indicators for non-financial assets.
- Assessing the adequacy of the going concern disclosure included in Note 1 to the consolidated financial statements and considering whether these appropriately reflected the assessments that management performed.

**MNP LLP**

Chartered Professional Accountants

We have served as the Company's auditor since 2023.

Calgary, Canada  
March 27, 2025

**MNP**

## REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors  
NXT Energy Solutions Inc.

### *Opinion on the Consolidated Financial Statements*

We have audited, before the effects of the adjustments to provide additional disclosures of board of directors fees and management compensation expense within the Related party expenses table in Note 22, the consolidated statements of loss and comprehensive loss, shareholders' equity deficit, and cash flows of NXT Energy Solutions Inc. (the "Company") for the year ended December 31, 2022, and the related notes (collectively, the "consolidated financial statements"). The 2022 consolidated financial statements before the effects of the adjustments in Note 22 are not presented herein. In our opinion, the consolidated financial statements present fairly, in all material respects, the results of the Company's operations and its cash flows for the year ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We were not engaged to audit, review, or apply any procedures to the adjustments to provide additional disclosures of board of directors fees and management compensation expense within the Related party expenses table in Note 22 and, accordingly, we do not express an opinion or any other form of assurance about whether such adjustments are appropriate and have been properly applied. Those adjustments were audited by other auditors.

### *Going Concern*

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company's current and forecasted cash and cash equivalents positions are not expected to be sufficient to meet its obligations which raises substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

### *Basis for Opinion*

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audit, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audit included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audit also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audit provides a reasonable basis for our opinion.

/s/ KPMG LLP

Chartered Professional Accountants

We have served as the Company's auditor from 2006 to 2023.

Calgary, Canada  
March 31, 2023



**NXT ENERGY SOLUTIONS INC.**  
**Consolidated Balance Sheets**  
(Expressed in Canadian dollars)

	<b>December 31, 2024</b>	<b>December 31, 2023</b>
<b>Assets</b>		
Current assets		
Cash and cash equivalents	\$ 730,395	\$ 401,713
Accounts receivable (Note 3)	105,858	1,828,523
Prepaid expenses	274,799	53,673
	<u>1,111,052</u>	<u>2,283,909</u>
Long term assets		
Deposits (Note 4)	261,485	249,917
Property and equipment (Note 5)	375,777	515,809
Right of Use Assets (Note 6)	2,506,506	665,130
Intellectual property (Note 7)	9,771,481	11,469,995
	<u>\$ 14,026,301</u>	<u>\$ 15,184,760</u>
<b>Liabilities and Shareholders' Equity Deficit</b>		
Current liabilities		
Accounts payable and accrued liabilities (Note 8, 22)	\$ 1,233,974	\$ 1,836,741
Deferred revenue (Note 9)	840,768	-
Convertible debentures (Note 10)	4,915,248	1,842,566
Current portion of long-term debt (Note 11)	111,111	111,111
Current portion of lease obligation (Note 12)	693,607	343,513
	<u>7,794,708</u>	<u>4,133,931</u>
Long-term liabilities		
Convertible debentures (Note 10)	4,259,709	1,513,423
Long-term debt (Note 11)	601,852	712,963
Long-term lease obligations (Note 12)	1,607,935	252,004
Asset retirement obligation (Note 13)	24,761	27,030
	<u>6,494,257</u>	<u>2,505,420</u>
	<u>14,288,965</u>	<u>6,639,351</u>
Shareholders' equity deficit		
Common shares (Note 15): - authorized unlimited		
Issued: 78,495,184 (2023 – 78,025,237) common shares	98,262,510	98,179,271
Contributed capital	9,739,322	9,552,839
Deficit	(108,264,496)	(99,186,701)
	<u>(262,664)</u>	<u>8,545,409</u>
	<u>\$ 14,026,301</u>	<u>\$ 15,184,760</u>

Going Concern (Note 1)  
Commitments (Note 14)  
Subsequent event (Note 17)

Signed "Charles Selby"  
\_\_\_\_\_  
Director

Signed "Bruce G. Wilcox"  
\_\_\_\_\_  
Director

The accompanying notes are an integral part of these consolidated financial statements.

**NXT ENERGY SOLUTIONS INC.**  
**Consolidated Statements of Loss and Comprehensive Loss**  
(Expressed in Canadian dollars)

	<b>For the Year ended December 31,</b>		
	<b>2024</b>	<b>2023</b>	<b>2022</b>
<b>Revenue</b>			
SFD <sup>®</sup> related revenue (Note 21)	\$ 644,294	\$ 2,145,716	\$ -
<b>Expenses</b>			
SFD <sup>®</sup> related costs, net	2,021,768	2,249,126	1,178,183
General and administrative expenses (Notes 17, 22)	4,045,778	3,420,143	3,736,431
Amortization	1,887,013	1,759,473	1,768,727
	<u>7,954,559</u>	<u>7,428,742</u>	<u>6,683,341</u>
<b>Other expenses (income)</b>			
Interest expense, net	750,611	160,262	36,220
Foreign exchange loss (gain)	574,106	(8,028)	(15,340)
Loss on remeasurement of convertible debentures (Note 10)	296,534	-	-
Loss on disposal of assets, lease modifications and other	146,279	15,852	28,855
	<u>1,767,530</u>	<u>168,086</u>	<u>49,735</u>
<b>Loss before income taxes</b>	<u>(9,077,795)</u>	<u>(5,451,112)</u>	<u>(6,733,076)</u>
<b>Income tax expense (Note 18)</b>	<u>-</u>	<u>-</u>	<u>-</u>
<b>Net loss and comprehensive loss</b>	<u>(9,077,795)</u>	<u>(5,451,112)</u>	<u>(6,733,076)</u>
<b>Loss per share (Note 16)</b>			
Basic	(0.12)	(0.07)	(0.10)
Diluted	(0.12)	(0.07)	(0.10)

The accompanying notes are an integral part of these consolidated financial statements.

**NXT ENERGY SOLUTIONS INC.**  
**Consolidated Statements of Cash Flows**  
(Expressed in Canadian dollars)

	<b>For the Year ended December 31,</b>		
	<b>2024</b>	<b>2023</b>	<b>2022</b>
<b>Cash from (used in):</b>			
<b>Operating activities</b>			
Net loss	\$ (9,077,795)	\$ (5,451,112)	\$ (6,733,076)
Items not affecting cash:			
Stock based compensation expense (Note 17)	268,734	241,271	215,284
Amortization	1,887,013	1,759,473	1,768,727
Accretion expense (recovery) (Note 13)	(2,269)	2,456	2,237
Non-cash lease amortization and accretion (Note 12)	353,433	683,190	752,149
Unrealized foreign exchange (gain) loss	659,257	(25,451)	13,956
Loss on disposal of assets and lease modifications	135,455	-	11,921
Remeasurement of convertible debentures (Note 10)	296,534	-	-
Change in deposits	5,763	3,362	-
Change in non-cash working capital balances (Note 20)	1,868,996	(1,294,087)	1,755,107
Lease payments (Note 12)	(364,712)	(739,527)	(720,309)
Prepaid Ling-term insurance	-	(11,525)	-
	5,108,204	619,162	3,799,072
Net cash used in operating activities	(3,969,591)	(4,831,950)	(2,934,004)
<b>Financing activities</b>			
Proceeds from the Employee Share Purchase plan (Note 17)	41,620	36,246	49,738
Proceeds for Restricted Stock Units	-	4,370	-
Repayment of long-term debt (Note 11)	(111,111)	(111,111)	(64,815)
Net proceeds from Rights Offering (Note 15)	-	-	216,062
Net proceeds from Private Placement (Note 15)	-	1,622,057	216,182
Net proceeds from Convertible Debentures (Note 10)	4,735,004	3,457,555	-
Repayment of lease obligations (Note 12)	(359,706)	-	(27,950)
Net cash from financing activities	4,305,807	5,009,117	389,217
<b>Investing activities</b>			
Purchase of property and equipment, net	(27,029)	(32,322)	-
Proceeds from short-term investments	-	-	550,000
Net cash from (used in) investing activities	(27,029)	(32,322)	550,000
Effect of foreign exchange rate changes on cash and cash equivalents	19,495	(6,569)	369
Net increase (decrease) in cash and cash equivalents	328,682	138,276	(1,994,418)
Cash and cash equivalents, beginning of the year	401,713	263,437	2,257,855
Cash and cash equivalents, end of the year	730,395	\$ 401,713	\$ 263,437
<b>Supplemental information</b>			
Cash interest paid	548,756	120,952	35,779
Cash taxes paid	-	-	-

The accompanying notes are an integral part of these consolidated financial statements.

**NXT ENERGY SOLUTIONS INC.**  
**Consolidated Statements of Shareholders' Equity Deficit**  
(Expressed in Canadian dollars)

	<b>For the Year ending December 31,</b>		
	<b>2024</b>	<b>2023</b>	<b>2022</b>
<b>Common Shares</b>			
Balance at beginning of the year	\$ 98,179,271	\$ 96,423,648	\$ 95,779,352
Issuance of common stock, net of share issuance costs for:			
Rights Offering (Note 15)	-	-	216,062
Private placement (Note 15)	-	1,622,057	216,182
Employee Share Purchase Plan (Note 15)	83,239	66,755	89,127
Restricted Stock Unit Plan (Note 15)	-	66,811	122,925
Balance at end of the year	<u>98,262,510</u>	<u>98,179,271</u>	<u>96,423,648</u>
<b>Contributed Capital</b>			
Balance at beginning of the year	9,552,839	9,404,518	9,381,966
Recognition of stock-based compensation expense (Note 17)	186,483	148,321	22,552
Balance at end of the year	<u>9,739,322</u>	<u>9,552,839</u>	<u>9,404,518</u>
<b>Deficit</b>			
Balance at beginning of the year	(99,186,701)	(93,735,589)	(87,002,513)
Net loss	(9,077,795)	(5,451,112)	(6,733,076)
Balance at end of the year	<u>(108,264,496)</u>	<u>(99,186,701)</u>	<u>(93,735,589)</u>
<b>Total Shareholders' Equity Deficit at end of the year</b>	<u>(262,664)</u>	<u>8,545,409</u>	<u>12,092,577</u>

The accompanying notes are an integral part of these consolidated financial statements.

## **NXT ENERGY SOLUTIONS INC.**

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### **1. The Company and going concern**

NXT Energy Solutions Inc. (the "Company" or "NXT") is a publicly traded company based in Calgary, Alberta Canada and listed on the Toronto Stock Exchange ("TSX").

NXT's proprietary Stress Field Detection ("SFD<sup>®</sup>") technology is an airborne survey system that utilizes the principles of quantum mechanics to infer stress anomalies of exploration interest. The method can be used both onshore and offshore to remotely identify areas conducive to fluid entrapment in order to recommend areas with commercial hydrocarbon and/or geothermal potential.

These consolidated financial statements of NXT have been prepared by management in accordance with generally accepted accounting principles of the United States of America ("US GAAP").

These consolidated financial statements reflect adjustments, all of which are normal recurring adjustments that are, in the opinion of management, necessary to reflect fairly the financial position and results of operations for the respective periods.

These consolidated financial statements have been prepared on a going concern basis. The going concern basis of presentation assumes that NXT will continue in operation for the foreseeable future and will be able to realize its assets and discharge its liabilities and commitments in the normal course of business.

The events described in the following paragraphs highlight that there continues to be material uncertainties that cast substantial doubt about NXT's ability to continue as a going concern within one year after the date that these consolidated financial statements have been issued. The Company's current cash position is not expected to be sufficient to meet the Company's obligations and planned operations for a year beyond the date that these consolidated financial statements have been issued.

During 2024 the Company completed an SFD<sup>®</sup> survey and has received deposits payments on three other SFD<sup>®</sup> surveys planned to be executed in 2025 (the "2025 SFD<sup>®</sup> Surveys"). As of the date of these financial statements, the Company has finished the acquisition phase of one of the 2025 SFD<sup>®</sup> Surveys and received milestone payments which has generated cash from operations for the Company. In addition, during 2023 and 2024 the Company completed private placements which resulted in raising an additional net proceeds of \$9,757,366 (Notes 10 and 15).

The Company continues to develop its pipeline of opportunities to secure additional revenue contracts. The Company's longer-term success remains dependent upon its ability to convert these revenue opportunities into successful contracts, to continue to attract new client projects, expand its revenue base to a level sufficient to exceed fixed operating costs, and generate consistent positive cash flow from operations. The occurrence and timing of these events cannot be predicted with certainty.

Further financing options that may or may not be available to the Company include issuance of new equity, debentures or bank credit facilities. The need for any of these options will be dependent on the timing of securing additional SFD<sup>®</sup> related revenues and obtaining financing on terms that are acceptable to both the Company and the financier.

## **NXT ENERGY SOLUTIONS INC.**

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

The consolidated financial statements do not reflect adjustments that would be necessary if the going concern basis was not appropriate. If the going concern basis was not appropriate for these consolidated financial statements, then adjustments would be necessary in the carrying value of the assets and liabilities, the reported revenues and expenses, and the balance sheet classifications used. These adjustments could be material.

#### **Use of Estimates and Judgements**

In preparing these consolidated financial statements, NXT is required to make estimates and assumptions that affect both the amount and timing of recording assets, liabilities, revenues and expenses since the determination of these items may be dependent on future events. The Company uses the most current information available and exercises careful judgment in making these estimates and assumptions. In the opinion of management, these consolidated financial statements have been properly prepared within reasonable limits of materiality and within the framework of the Company's significant accounting policies. The estimates and assumptions used are based upon management's best estimate as at the date of the consolidated financial statements. Estimates and assumptions are reviewed periodically and the effects of revisions are reflected in the period when determined. Actual results may differ from those estimates.

Certain estimates and judgments have a material impact where the assumptions underlying these accounting estimates relate to matters that are highly uncertain at the time the estimate or judgment is made or are subjective. In 2024, 2023 and 2022, the estimates and judgments included the assessment of impairment indicators of intellectual property and recognition of SFD<sup>®</sup> related revenue.

The Company reviews intellectual property for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable. The Company considers both internal and external factors when assessing for potential indicators of impairment of its intellectual property, including the consideration of historical and forecasted SFD<sup>®</sup> related revenues, market capitalization, control premiums, and the SFD<sup>®</sup> related revenue multiples compared to industry peers. When indicators of impairment exist, the Company first compares the total of the estimated undiscounted future cash flows or the estimated sale price to the carrying value of an asset. If the carrying value exceeds these amounts, an impairment loss is recognized for the excess of the carrying value over the estimated fair value of the intellectual property.

Other accounting estimates and judgments that may have a material impact on the financial statements include: the forward-looking assumptions related to the going concern assumption, the estimated useful lives of intellectual property and property, plant and equipment, lease interest rates and terms, the fair value of convertible debentures, and the assumptions used to measure stock-based compensation expense.

## **NXT ENERGY SOLUTIONS INC.**

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

## **2. Significant Accounting Policies**

### **Basis of Presentation**

These consolidated financial statements for the year ended December 31, 2024 have been prepared by management in accordance with generally accepted accounting principles of US GAAP.

### **Consolidation**

These consolidated financial statements reflect the accounts of the Company and its wholly owned subsidiaries (all of which are inactive). All significant inter-company balances and transactions among NXT and its subsidiaries have been eliminated and are therefore not reflected in these consolidated financial statements.

### **Cash and Cash Equivalents**

Cash and cash equivalents consist of cash on hand and short term Guaranteed Investment Certificates ("GIC's") with an original maturity less than 90 days from the date of acquisition.

### **Short Term Investments**

Short term investments consist of short term GICs, with original maturity dates greater than 90 days and up to one year.

### **Derivative Instruments**

As at December 31, 2024 and 2023, NXT had no outstanding derivative instruments.

### **Fair Value Measures**

For any balance sheet items recorded at fair value on a recurring basis or non-recurring basis, the Company is required to classify the fair value measure into one of three categories based on the fair value hierarchy noted below.

In Level I, the fair value of assets and liabilities is determined by reference to quoted prices in active markets for identical assets and liabilities that the Company has the ability to assess at the measurement date.

At December 31, 2024 the fair values of restricted stock units ("RSU") liability was based on share price that was determined using Level I inputs.

In Level II, determination of the fair value of assets and liabilities is based on the extrapolation of inputs, other than quoted prices included within Level I, for which all significant inputs are observable directly or indirectly. Such inputs include published exchange rates, interest rates, yield curves and stock quotes from external data service providers. Transfers between Level I and Level II would occur when there is a change in market circumstances. There are no Level II fair value measures.

In Level III, the fair value of assets and liabilities measured on a recurring basis is determined using a market approach based on inputs that are unobservable and significant to the overall fair value measurement. Assets and liabilities measured at fair value can fluctuate between Level II and Level III depending on the proportion of the value of the contract that extends beyond the time frame for which inputs are considered to be observable. As contracts near maturity and observable market data becomes available, the contracts are transferred out of Level III and into Level II.

**NXT ENERGY SOLUTIONS INC.**

Notes to the Consolidated Financial Statements  
As at and for the years ended December 31, 2024, 2023 and 2022  
(Expressed in Canadian dollars unless otherwise stated)

The determination of the fair value of the acquisition of the Intellectual property (Note 7) was determined using Level III inputs, as well as the November Debentures and 2024 Debentures (both defined in Note 10).

**Measurement of credit losses on financial instruments**

The impairment model of financial instruments is based on expected losses rather than incurred losses. In making the assessment of expected losses, the Company considers the following factors: historically realized bad debts; a counterparty’s present financial condition and whether a counterparty has breached certain contracts; the probability that a counterparty will enter bankruptcy; changes in economic conditions that correlate to increased levels of default and term to maturity of the specific receivable. These expected credit losses are recognized as an allowance rather than as a direct write-down of the amortized cost basis.

**Deposits**

Deposits consist of security payments made to lessors for the Company’s office and aircraft lease. They are classified as long term if the lease end date is greater than one year.

**Property and Equipment**

Property and equipment is recorded at cost, less accumulated amortization, which is recorded over the estimated service lives of the assets using the following annual rates and methods:

Survey equipment	20% declining balance
Computers	30% declining balance
Furniture and other equipment	20% declining balance
Leasehold improvements	10% declining balance

**Intellectual Property**

Intellectual property acquired is recorded at cost, less accumulated amortization, which is recorded over the estimated minimum useful life of the assets. The Company incurs periodic costs that are expensed when incurred to file patents and to maintain them.

**Impairment of Long-Lived Assets**

The Company reviews long-lived assets, which includes property, equipment and intellectual property for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable. The Company considers both internal and external factors when assessing for potential indicators of impairment, and with respect to intellectual property, the Company’s assessment includes consideration of historical and forecasted SFD® related revenues, market capitalization, control premiums, and the SFD® related revenue multiples compared to industry peers.

When indicators of impairment exist, the Company first compares the total of the estimated undiscounted future cash flows or the estimated sale price to the carrying value of an asset. If the carrying value exceeds these amounts, an impairment loss is recognized for the excess of the carrying value over the estimated fair value of the asset.



## **NXT ENERGY SOLUTIONS INC.**

### **Notes to the Consolidated Financial Statements**

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### **Convertible Debentures**

Convertible debentures are recorded as a current liability if the Company has an obligation to deliver cash to the holder on demand on or before the maturity date and a long-term liability if non-demand and the maturity date is greater than one year. If the convertible debentures are converted to either voting preferred or common shares, the preferred or common shares will be classified as equity. Interest on the convertible debenture is accrued as earned. The November Debentures and the 2024 Debentures (defined below) are revaluated at their fair values. Since they are denominated in US\$ they do not meet the fix to fix criteria.

#### **Foreign Currency Translation**

The Company's functional currency is the Canadian dollar. Revenues and expenses denominated in foreign currencies are translated into Canadian dollars at the average exchange rate for the applicable period. Monetary assets and liabilities are translated into Canadian dollars at the exchange rate in effect at the end of the applicable period. Non-monetary assets and liabilities are recorded at the relevant exchange rates for the period in which the balances arose. Any related foreign exchange gains and losses resulting from these translations are included in the determination of net income (loss) for the period.

#### **Income Taxes**

NXT follows the asset and liability method of accounting for income taxes. This method recognizes deferred income tax assets and liabilities based on temporary differences in reported amounts for financial statement and income tax purposes, at the income tax rates expected to apply in the future periods when the temporary differences are expected to be reversed or realized. The effect of a change in income tax rates on deferred income tax assets and deferred income tax liabilities is recognized in income in the period when the tax rate change is enacted. Valuation allowances are provided when necessary to reduce deferred tax assets to the amount that is more likely than not to be realized.

#### **Stock-based Compensation**

NXT follows the fair value method of accounting for stock options, restricted stock units, deferred stock units, and the employee share purchase plan (the "Share Compensation Plans") that are granted to acquire common shares under NXT's Share Compensation Plans. For equity-settled stock-based compensation awards, fair values are determined at the grant date and the expense, net of estimated forfeitures, is recognized over the requisite service period with a corresponding increase recorded in contributed capital. An adjustment is made to compensation for any differences between the estimated forfeitures and the actual forfeitures. For cash-settled stock-based compensation awards, fair values, based on observable prices, are determined at each reporting date and periodic changes are recognized as compensation costs, with a corresponding change to liabilities. Stock-based awards with performance conditions are recognized as compensation costs only when the performance condition is probable of being met.

Upon exercise or realization of the equity-settled Share Compensation Plans, the consideration received by NXT, and the related amount which previously recorded in contributed capital, is recognized as an increase in the recorded value of the common shares of the Company.

## **NXT ENERGY SOLUTIONS INC.**

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### **Net Income (Loss) Per Share**

Basic income (loss) per share amounts is calculated by dividing net income (loss) by the weighted average number of common shares that are outstanding for the fiscal period. Shares issued during the period are weighted for the portion of the period that the shares were outstanding. Diluted income per share, in periods when NXT has net income, is computed using the treasury stock method, whereby the weighted average number of shares outstanding is increased to include any additional shares that would be issued from the assumed exercise of stock options and restricted stock units. The incremental number of shares added under the treasury stock method assumes that outstanding stock options and restricted stock units that are exercisable at exercise prices below the Company's average market price (i.e. they were "in-the-money") for the applicable fiscal period are exercised and then that number of incremental shares is reduced by the number of shares that could have been repurchased by the Company from the issuance proceeds, using the average market price of the Company's shares for the applicable fiscal period.

No addition to the basic number of shares is made when calculating the diluted number of shares if the diluted per share amounts become anti-dilutive (such as occurs in the case where there is a net loss for the period).

#### **Revenue**

##### SFD<sup>®</sup> Surveys

The performance obligation for NXT in SFD<sup>®</sup> surveys is the acquisition, processing, interpretation and integration of Stress Field Detection (SFD<sup>®</sup>) data. Revenue from the sale of SFD<sup>®</sup> survey contracts (excluding any related foreign value added taxes) is recognized over time by measuring the progress toward satisfaction of its performance obligation to the customer. All funds received or invoiced in advance of recognition of revenue are reflected as contract obligations and classified as a current liability on our balance sheet.

The Company uses direct survey costs as the input measure to recognize revenue in any fiscal period. The percentage of direct survey costs incurred to date over the total expected survey costs to be incurred, provides an appropriate measure of the stage of the performance obligation being satisfied over time.

##### SFD<sup>®</sup> Data Sales

The performance obligation for NXT in SFD<sup>®</sup> data sales is the delivery of the promised specific services as itemized in the contract with the customer. Revenue from the sale of SFD<sup>®</sup> data (excluding any related foreign value added taxes) is recognized once the services are completed and the data is transferred to the customer.

#### **Leases**

The Company determines if an arrangement is an operating or finance lease, as defined under US GAAP, at inception. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. These leases are included in right-of-use ("ROU") assets and lease obligations in the Consolidated Balance Sheet.

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

ROU assets represent the Company's right to use an underlying asset for the lease term and lease obligations represent the obligation to make lease payments arising from such leases. Lease obligations are recognized at the lease commencement date based on the present value of remaining lease payments over the lease term, taking into consideration conditions such as incentives and termination penalties, as appropriate. A corresponding ROU asset is recognized at the amount of the lease obligation, adjusted for payments made prior to lease commencement or initial direct costs, if any.

When calculating the present value, the Company uses the rate implicit in the lease, or uses its incremental borrowing rate for a similar term and risk profile based on the information available at the commencement date. The Company's lease terms may have options to extend or terminate the lease which are included in the calculation of lease obligations when it is reasonably certain that it will exercise those options. Lease expense for operating leases is recognized on a straight-line basis over the lease term. Office and equipment lease expenses are included within General and administrative expenses.

The aircraft lease cost is treated as a finance lease and is recorded in ROU assets. The ROU asset amortization included within amortization costs and lease payments are recorded as interest expense and as a reduction in the lease liability. The aircraft ROU is amortized at a 10% declining balance.

Lease agreements can contain both lease and non-lease components, which are accounted for separately.

### Government grants

Government grants are recognized when there is reasonable assurance that the grant will be received, and all attached conditions will be complied with. When the grant relates to an expense item, it is recognized as an expense reduction in the period in which the costs are incurred. Where the grant relates to an asset, it is recognized as a reduction to the net book value of the related asset and then subsequently in net loss over the expected useful life of the related asset through lower charges to amortization and impairment.

### 3. Accounts Receivable

	December 31, 2024	December 31, 2023
Trade receivables	\$ 22,210	\$ 1,738,694
Other receivables	83,648	89,829
	105,858	1,828,523
Allowance for doubtful accounts	-	-
Net accounts receivable	105,858	1,828,523

The entire trade receivables at December 31, 2024 and December 31, 2023 were with one, but not the same customer in each year. All trade receivables were current and were collected subsequent to December 31 each year.

**NXT ENERGY SOLUTIONS INC.**

Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)**4. Deposits**

Security deposits have been made to the lessors of the office building and the aircraft. The aircraft deposit is denominated in United States Dollars.

	<b>December 31, 2024</b>	<b>December 31, 2023</b>
Prepaid expenses	\$ 2,401	\$ 8,164
Building	43,309	43,309
Aircraft	215,775	198,444
	<u>261,485</u>	<u>249,917</u>

**5. Property and equipment**

	<b>December 31, 2024</b>		
	<b>Cost Base</b>	<b>Accumulated Amortization</b>	<b>Net book value</b>
Survey equipment	\$ 949,062	\$ 771,143	\$ 177,919
Computers and software	1,265,045	1,257,313	7,732
Furniture and other equipment	405,877	401,110	4,767
Leasehold improvements	523,507	338,148	185,359
	<u>3,143,491</u>	<u>2,767,714</u>	<u>375,777</u>

	<b>December 31, 2023</b>		
	<b>Cost Base</b>	<b>Accumulated Amortization</b>	<b>Net book value</b>
Survey equipment	\$ 924,959	\$ 743,239	\$ 181,720
Computers and software	1,265,045	1,254,000	11,045
Furniture and other equipment	528,419	520,525	7,894
Leasehold improvements	1,064,225	749,075	315,150
	<u>3,782,648</u>	<u>3,266,839</u>	<u>515,809</u>

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### 6. Right of use assets

	December 31, 2024		
	Cost Base	Accumulated Amortization	Right of Use
Aircraft	\$ 3,468,239	\$ 1,939,006	\$ 1,529,233
Office Building	2,324,694	1,352,941	971,753
Printer	9,716	4,196	5,520
	<u>5,802,649</u>	<u>3,296,143</u>	<u>2,506,506</u>

  

	December 31, 2023		
	Cost Base	Accumulated Amortization	Right of Use
Aircraft	\$ 1,847,617	\$ 1,728,958	\$ 118,659
Office Building	1,725,414	1,186,673	538,741
Printer	9,716	1,986	7,730
	<u>3,582,747</u>	<u>2,917,617</u>	<u>665,130</u>

#### Aircraft

On March 22, 2024 the Company extended its Aircraft lease for three years to March 28, 2027. The Company will own the aircraft at the end of the lease term. Terms of the lease extension include an interest rate of 12%, and monthly payments of US\$40,189. The Company has an early purchase option to acquire the aircraft on any of the following dates, March 28, 2025, September 28, 2025, March 28, 2026 or September 28, 2026. The purchase price would be the amortized value of the lease liability, plus a four-months of interest. The lease is being treated as a finance lease. As a result of the lease extension the Right of Use Assets and lease obligations have been increased as follows:

Right of Use Assets	CDN\$1,620,622
Lease obligations	US\$1,182,393

The Company recognized a loss of \$31,686 on the Aircraft lease modification.

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### Building

On May 1, 2024, the Company surrendered approximately 3,207 square feet of its office building lease to the landlord and extended its lease for an additional five years until September 30, 2030. Terms of the lease extension include an implied interest rate of 10%, and monthly payments of \$19,771. The lease will continue to be treated as an operating lease. As a result of the lease extension the Right of Use Assets and lease obligations have been increased as follows:

Right of Use Assets	\$	599,281
Lease obligations	\$	600,495

The Company has recognized a loss of \$1,214 on the building lease modification, and a loss on disposal of leasehold improvements of \$102,555.

#### 7. Intellectual property

	December 31, 2024		
	Cost Base	Accumulated amortization	Net book Value
SFD <sup>®</sup> Hydrocarbon Right acquired	\$ 25,271,000	\$ 15,724,601	\$ 9,546,399
SFD <sup>®</sup> Geothermal Right acquired	275,610	50,528	225,082
	25,546,610	15,775,129	9,771,481

  

	December 31, 2023		
	Cost Base	Accumulated amortization	Net book Value
SFD <sup>®</sup> Hydrocarbon Right acquired	\$ 25,271,000	\$ 14,039,868	\$ 11,231,132
SFD <sup>®</sup> Geothermal Right acquired	275,610	36,747	238,863
	25,546,610	14,076,615	11,469,995

#### SFD<sup>®</sup> Hydrocarbon Right

During 2015, NXT acquired the rights to the SFD<sup>®</sup> technology for use in the exploration of hydrocarbons (“Hydrocarbon Right”) from Mr. George Liszicasz, the former President and CEO of NXT (“CEO”), and recorded the acquisition as an intellectual property asset on the balance sheet. The asset was recorded at the fair value of the consideration transferred, including the related tax effect of approximately \$25.3 million.

#### SFD<sup>®</sup> Geothermal Right

The Company acquired the SFD<sup>®</sup> technology rights for geothermal resources (“Geothermal Right”) from the CEO on April 18, 2021. The consideration deliverable by the Company in connection with the acquisition of the Geothermal Right is set forth below:

1. US\$40,000 (CDN\$50,310) signature payment, which became due immediately and was paid on April 22, 2021;
2. 300,000 common shares, which were issued in December 2021;
3. CDN\$15,000 signature milestone payment paid in August 2021;
4. US\$200,000 milestone payment which will become due in the event that the Company's cash balance exceeds CDN\$5,000,000 due to receipt of specifically defined funds from operations; and
5. US\$250,000 milestone payment would have become due in the event that the Company executed, completed, and received full payment for an SFD<sup>®</sup> contract valued at US\$10,000,000 or greater, provided such contract was entered into and completed and payment of at least US\$5,000,000 was received by April 18, 2023. This milestone expired as of April 18, 2023.

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

As of December 31, 2024, the Company has recognized \$275,610 for the acquisition of the Geothermal Right which is the combination of the US\$40,000 (CDN\$50,310) and CDN\$15,000 signature payments, the value of the 300,000 common shares of \$207,300 and other costs of \$3,000. The cost of the remaining milestone will be recognized when it is deemed probable that the milestone will be achieved by a special committee of the Board of Directors, comprised entirely of independent directors. The Board of Directors delegated authority to the special committee to determine when the milestones have been achieved. As of December 31, 2024 the remaining milestone is still deemed not probable of being achieved.

#### Reconciliation of Intellectual Property

	<b>SFD<sup>®</sup> Hydrocarbon Right</b>	<b>SFD<sup>®</sup> Geothermal Right</b>	<b>Total</b>
Net book value at December 31, 2022	\$ 12,915,866	\$ 252,643	\$ 13,168,509
Amortization for 2023	(1,684,734)	(13,780)	(1,698,514)
Net book value at December 31, 2023	11,231,132	238,863	11,469,995
Amortization for 2024	(1,684,733)	(13,781)	(1,698,514)
Net book value at December 31, 2024	9,546,399	225,082	9,771,481

The Hydrocarbon Right is being amortized on a straight-line basis over its estimated useful life of 15 years. The annual amortization expense expected to be recognized is approximately \$1.7 million per year for a 5-year aggregate total of \$8.5 million.

The current book value of the Geothermal Right is being amortized on a straight-line basis over its estimated useful life of 20 years. The annual amortization expense expected to be recognized is approximately \$13,781 per year for a 5-year aggregate total of approximately \$68,902.

#### **8. Accounts payable and accrued liabilities**

	<b>December 31, 2024</b>	<b>December 31, 2023</b>
Accrued liabilities related to:		
Consultants and professional fees	\$ 261,753	\$ 225,224
Payroll related	471,596	525,472
Board of director's fees	201,218	228,199
Interest payable	109,029	38,222
	<u>1,043,596</u>	<u>1,017,117</u>
Trade payables and other	190,378	819,624
	<u>1,233,974</u>	<u>1,836,741</u>

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### 9. Deferred revenue

As of December 31, 2024, the company has received \$840,768 (US\$584,477) of deposits for signed SFD<sup>®</sup> contracts to be executed in 2025 (\$nil for 2023).

#### 10. Convertible Debentures

##### 2024 Debentures

On May 31, 2024 the Company issued convertible debentures (the "2024 Debentures") to MCAPM LP for the principal amount of US\$2,000,000, being approximately CDN\$2,773,660. The 2024 Debentures bear interest at 10.0% per annum, paid quarterly in arrears, and are due and payable on May 31, 2026. The 2024 Debentures are convertible into common shares at a conversion price of US\$0.25 per Common Share which provides MCAPM LP with the right to obtain up to 8,000,000 common shares of the Company. The 2024 Debentures are unsecured.

##### November Debentures

The Company issued a total of US\$1,872,000 (approximately CAD\$2,543,636) of a multi-tranche unsecured convertible debenture (the "November Debentures"). The November Debentures bear interest at 10.0% per annum, paid quarterly in arrears, and are due and payable two years after issuance. The November Debentures are convertible into common shares in the capital of NXT at a fixed conversion price of US\$0.1808 allowing the subscribers to obtain an aggregate of up to 10,353,982 common shares. Insiders which include MCAPM, LP and Michael P. Mork ("Mork Capital") and directors of NXT, were issued November Debentures valued, in the aggregate principal amount, at US\$1,522,000 (approximately CDN\$2,076,776).

During 2023, the Company issued the first two tranches of the November Debentures for US\$1,150,000 (approximately CDN\$1,577,600).

On January 12, 2024, the Company closed the final tranche of the November Debentures for an additional US\$722,000 (approximately CDN\$966,036). The November Debentures are unsecured.

Mork Capital has the right to own, after conversion of all of their 2024 Debentures and November Debentures, totaling US\$3,375,000, a total of 30,526,321 common shares. This represents approximately 32.1% of the issued and outstanding common shares as of the date of these financial statements (after giving effect to the conversion of the full amount of the 2024 Debentures and the November Debentures).

##### Ataraxia Debentures

In May 2023 the Company signed a subscription agreement with Ataraxia Capital ("Ataraxia") in which Ataraxia would purchase US\$2,300,000 of convertible debentures. The terms of the convertible debentures issued to Ataraxia include an annual interest rate of 10%, paid quarterly in arrears. They can also be converted into voting preferred shares with an annual dividend rate of 10% paid per quarter. The preferred shares are not transferable, but may be converted on a one-to-one basis into common shares. The convertible debentures are payable on demand, but are due two years after the issue date. They are secured by a general security agreement, subordinate to the long-term debt.



## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

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On May 31, 2023 the Company issued a two-year term convertible debenture for US\$1,200,000 (CDN\$1,631,954) to Ataraxia and an additional US\$200,000 (CDN\$265,560) on July 10, 2023 (the “2023 Ataraxia Debentures”). The 2023 Ataraxia Debentures have a fixed conversion price of US\$0.143 per common share.

On November 4, 2024 the Company issued a two-year term convertible debenture for US\$500,000 (CDN\$676,995) to Ataraxia and an additional US\$400,000 (CDN\$550,296) on November 12, 2024 (the “2024 Ataraxia Debentures”). The 2024 Ataraxia Debentures have a fixed conversion price of US\$0.24 per common share.

Ataraxia has the right to own, after conversion of all of their 2023 Ataraxia Debentures and 2024 Ataraxia Debentures, 13,540,209 common shares. This represents approximately 14.6% of the issued and outstanding common shares as of the date of these financial statements (after giving effect to the conversion of the full amount of the 2023 Ataraxia Debentures and 2024 Ataraxia Debentures).

#### Repayment of principal and interest for convertible debentures:

	US\$	CDN\$ <sup>1</sup>
2025	3,102,200	4,462,515
2026	3,830,050	5,509,527
Total principal and interest payments	6,932,250	9,972,042
Less interest	(760,250)	(1,093,619)
Principal remaining	6,172,000	8,878,423
Change in fair value of convertible debentures	206,141	296,534
Net principal remaining	6,378,141	9,174,957
Current portion of convertible debentures	3,416,926	4,915,248
Non-current portion of convertible debentures	2,961,215	4,259,709

1. Converted at 1.4385

#### Fair Value

The November Debentures and the 2024 Debentures have been revalued at their fair value as of December 31, 2024 using level 3 inputs as follows:

US\$/CDN\$ volatility	6.58%
Stock price volatility	173.78%
Stock price	\$ 0.11
Risk free interest rate	4.49%
Credit Spread	5.67% to 30.93%

The fair value change to the debentures in 2024 was \$296,534 (US\$206,141) and \$nil for 2023.

#### Interest expense for convertible debentures:

	2024	2023	2022
\$US	\$ 455,112	\$ 94,781	-
\$CDN	\$ 621,378	\$ 128,612	-

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

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(Expressed in Canadian dollars unless otherwise stated)

#### 11. Long-term debt

On May 26, 2021, the Company received \$1,000,000 from the Business Development Bank of Canada's ("BDC") Highly Affected Sectors Credit Availability Program ("HASCAP Loan"), funded by the Royal Bank of Canada. The HASCAP Loan is a \$1,000,000 non-revolving ten-year term credit facility with an interest rate of 4%. Repayment terms were interest only until May 26, 2022, and monthly principal plus interest payments for the remaining nine years. The HASCAP Loan is secured by a general security agreement and is guaranteed by BDC.

##### Repayment of principal and interest:

2025	\$	137,593
2026		133,148
2027		128,704
2028		124,259
2029		119,815
2030 to 2031		162,129
Total principal and interest payments		805,648
Less interest		(92,685)
Total principal remaining		712,963
Current portion of long-term debt		111,111
Non-current portion of long-term debt		601,852

#### 12. Lease obligation

	December 31, 2024	December 31, 2023
Aircraft <sup>1.</sup>	\$ 1,318,602	\$ 37,242
Office Building	977,420	550,548
Printer	5,520	7,727
	2,301,542	595,517
Current portion of lease obligations	693,607	343,513
Long-term lease obligations	1,607,935	252,004

1. Converted at 1.4385

**NXT ENERGY SOLUTIONS INC.**
**Notes to the Consolidated Financial Statements**

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

<b>Maturity of lease liabilities:</b>	<b>Finance Lease<sup>1</sup></b>	<b>Operating Leases</b>	<b>Total</b>	<b>Weighted Average Remaining Lease Terms</b>
2025	693,743	240,676	<b>934,419</b>	3.7 years
2026	693,742	240,391	<b>934,133</b>	3.1 years
2027	116,615	237,252	<b>353,867</b>	3.3 years
2028	-	237,252	<b>237,252</b>	2.3 years
2029	-	237,252	<b>237,252</b>	1.8 years
2030	-	177,939	<b>177,939</b>	0.8 years
Total lease payments	1,504,100	1,370,762	<b>2,874,862</b>	
Less imputed interest	(185,498)	(387,822)	<b>(573,320)</b>	
Total discounted lease payments	1,318,602	982,940	<b>2,301,542</b>	
Current portion of lease obligations	565,974	127,633	<b>693,607</b>	
Non-current portion of lease obligations	752,628	855,307	<b>1,607,935</b>	

1. Converted at 1.4385

<b>Movement of lease obligations</b>	<b>2024</b>	<b>2023</b>
Opening balance, January 1	\$ 595,517	\$ 1,246,723
Additions	2,252,803	-
Operating lease payments	(364,712)	(739,527)
Finance lease principal payments	(359,706)	-
Lease accretion	99,803	90,378
Foreign exchange	78,740	(908)
Other	(903)	(1,149)
Closing Balance, December 31	2,301,542	595,517
Current portion of lease obligations	693,607	343,513
Long-term lease obligations	1,607,935	252,004

	<b>Lease Term Till</b>	<b>Option to Extend</b>	<b>Incremental Borrowing Rate</b>
Aircraft	March 2027	No	12.0%
Office Building	September 2030	No	10.0%
Printer	November 2026	No	10.8%

As of December 31, 2024 the Company's aircraft lease was a financing lease and the other leases were operating leases. The Company's aircraft lease began to be treated as a finance lease as of March 22, 2024. The Company's total operating lease expenditures for the year ended December 31, 2024 was \$364,712 (2023 - \$739,527). The Company's total financing lease expenditures for the year ended December 31, 2024 was \$ 495,233 (2023 - \$nil).

**NXT ENERGY SOLUTIONS INC.**

## Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

Non-cash lease amortization and accretion

	2024	2023	2022
Amortization of lease incentives and other	\$ (9,997)	\$ (8,099)	\$ (4,010)
ROU asset amortization	263,627	600,911	608,495
Lease liability accretion	99,803	90,378	147,664
	<u>353,433</u>	<u>683,190</u>	<u>752,149</u>

**13. Asset Retirement Obligations**

Asset retirement obligations ("ARO") relate to minor non-operated interests in oil and natural gas wells in which NXT has outstanding abandonment and reclamation obligations in accordance with government regulations. The estimated future abandonment liability is based on estimates of the future timing and costs to abandon, remediate and reclaim the well sites within the next five years. The net present value of the ARO is as noted below, and has been calculated using an inflation rate of 2.4% and discounted using a credit-adjusted risk-free interest rate of 10%.

	2024	2023	2022
ARO balance, beginning of the year	\$ 27,030	\$ 24,574	\$ 22,337
Accretion expense	2,069	2,069	2,069
Change in ARO estimates	(4,338)	387	168
ARO balance, end of the year	<u>24,761</u>	<u>27,030</u>	<u>24,574</u>

**14. Commitments**

The table below is the non-lease operating cost components associated with the costs of the building lease.

For the year ending December 31,	Office Premises
2025	163,401
2026	163,401
2027	163,401
2028	163,401
2029	163,401
2030	122,551
Total	<u>939,556</u>

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### 15. Common shares

The Company is authorized to issue an unlimited number of common shares, of which the following are issued and outstanding:

	For the years ended December 31,			
	2024		2023	
	# of shares	\$ amount	# of shares	\$ amount
As at the beginning of the year	78,025,237	98,179,271	68,949,109	96,423,648
Private placement, net of issuance costs	-	-	8,510,000	1,622,057
Employee Share Purchase Plan (Note 17)	469,947	83,239	309,509	66,755
Restricted Stock Units (Note 17)	-	-	256,619	66,811
As at the end of the year	78,495,184	98,262,510	78,025,237	98,179,271

	For the year ended December 31,	
	2022	
	# of shares	\$ amount
As at the beginning of the year	65,250,710	\$ 95,779,352
Rights offering, net of issuance costs	2,149,180	216,062
Private placement, net of issuance costs	1,148,282	216,182
Employee Share Purchase Plan (Note 17)	188,633	89,127
Restricted Stock Units	212,304	122,925
As at the end of the year	68,949,109	96,423,648

On December 22, 2022 the Company announced a multi-tranche private placement (the “Private Placement”) at \$0.195 per share. At December 22, 2022 the Company issued 1,148,282 common shares for gross proceeds of \$223,915 in the first tranche, less issuance costs of \$7,732. On January 25, 2023, the Company closed the Private Placement by issuing an additional 8,510,000 common shares, at \$0.195 per common share, for additional aggregate gross proceeds of approximately \$1,659,450, less issuance costs of \$37,393.

On December 2, 2022, NXT closed the Rights Offering that had been announced on October 31, 2022. The Company issued 2,149,180 common shares a price of \$0.18 per common share, for aggregate gross proceeds of a \$386,852. Share issue costs of \$170,790 were recorded as a reduction to share capital.

**NXT ENERGY SOLUTIONS INC.**

## Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

**16. Loss per share**

	<b>For the years ended December 31,</b>		
	<b>2024</b>	<b>2023</b>	<b>2022</b>
Net loss for the year	\$ (9,077,495)	\$ (5,451,112)	\$ (6,733,076)
Weighted average number of shares outstanding for the year:			
Basic	78,271,095	77,646,094	65,602,875
Diluted	78,271,095	77,646,094	65,602,875
Net loss per share – Basic	\$ (0.12)	\$ (0.07)	\$ (0.10)
Net loss per share – Diluted	\$ (0.12)	\$ (0.07)	\$ (0.10)

In years in which a loss results, all outstanding stock options, RSUs, deferred share units (“DSUs”) and potential shares from convertible debentures are excluded from the diluted loss per share calculations, as their effect is anti-dilutive.

**17. Share based compensation**

The Company has an equity compensation program in place for its executives, employees and directors. Executives and employees are given equity compensation grants that vest based on a recipient's continued employment. The Company's stock-based compensation awards outstanding as at December 31, 2024, include stock options, DSUs, RSUs, and the employee share purchase plan (“ESP Plan”). The following tables provide information about stock option, RSUs, DSUs, and ESP Plan activity.

	<b>For the years ended December 31,</b>		
	<b>2024</b>	<b>2023</b>	<b>2022</b>
Stock Option Expense	\$ 118,849	\$ 92,500	\$ 22,552
Deferred Share Units	15,000	-	-
Compensation Expense	52,634	55,821	-
Stock-based compensation expense in Contributed Capital	186,483	148,321	22,552
Employee Share Purchase Plan	41,619	30,508	39,389
Restricted Stock Units	40,632	62,442	153,343
Total stock-based compensation expense	268,734	241,271	215,284

# NXT ENERGY SOLUTIONS INC.

## Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

### Stock Options:

The following is a summary of stock options which are outstanding as at December 31, 2024.

Exercise price per share	# of options outstanding	# of options exercisable	Average remaining life (in years)
\$ 0.174	69,200	69,200	0.9
\$ 0.200	166,200	166,200	3.4
\$ 0.216	1,825,200	55,200	3.0
\$ 0.252	115,250	115,250	2.9
\$ 0.259	100,000	-	3.7
\$ 0.260	52,650	52,650	3.0
\$ 0.264	177,200	177,200	3.0
\$ 0.440	21,360	21,360	0.9
\$ 0.510	16,000	16,000	0.7
\$ 0.550	30,000	30,000	0.1
\$ 0.620	18,050	18,050	0.9
\$ 0.680	32,250	32,250	0.9
\$ 0.720	24,460	24,460	0.9
	2,647,820	777,820	2.8

A continuity of the number of stock options which are outstanding at the end of the current year and as at the prior years ended December 31, 2023 and 2022 are as follows:

	For the years ended December 31,			
	2024		2023	
	# of stock Options	weighted average exercise price	# of stock Options	Weighted Average exercise price
Options outstanding, start of the year	2,927,820	\$ 0.32	461,320	\$ 0.51
Granted	-	\$ -	2,716,500	\$ 0.22
Forfeited	(180,000)	\$ (0.22)	(100,000)	\$ (0.22)
Expired	(100,000)	\$ (0.52)	(150,000)	\$ (0.59)
Options outstanding, end of the year	2,647,820	\$ 0.24	2,927,820	\$ 0.25
Options exercisable, end of the year	777,820	\$ 0.30	877,820	\$ 0.32

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

	For the year ended December 31, 2022	
	# of stock Options	Weighted Average exercise price
Options outstanding, start of the year	358,660	\$ 0.56
Granted	134,060	\$ 0.40
Cancelled	(31,400)	\$ (0.51)
Options outstanding, end of the year	461,320	\$ 0.51
Options exercisable, end of the year	461,320	\$ 0.51

Stock options granted generally expire, if unexercised, five years from the date granted and entitlement to exercise them generally vests at a rate as determined by the Board of Directors.

Stock-based compensation expense is calculated based on the fair value attributed to grants of stock options using the Black-Scholes valuation model and utilizing the following weighted average assumptions:

For the year ended	2024	2023	2022
Expected dividends paid per common share	-	Nil	Nil
Expected life in years	-	5.0	5.0
Weighted average expected volatility in the price of common shares	-	79%	75%
Weighted average risk-free interest rate	-	3.32%	3.05%
Weighted average fair market value per share at grant date	- \$	0.22	\$ 0.40
Forfeiture rate	-	18.5%	0%

### Deferred Stock Units:

A continuity of the number of DSUs which are outstanding at the end of the current year and as at the prior years ended December 31, 2023 and 2022 are as follows:

	For the years ended December 31,		
	2024	2023	2022
Opening balance	37,354	37,354	37,354
Granted	82,872	-	-
Closing balance	120,226	37,354	37,354

The DSUs plan is a long-term incentive plan that permits the grant of DSUs to qualified directors. DSUs granted under the DSUs plan are to be settled at the retirement, resignation or death of the Board member holding the DSUs.



## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### Restricted Stock Units:

RSUs entitle the holder to receive, at the option of the Company, either the underlying number of shares of the Company's common shares upon vesting of such units or a cash payment equal to the value of the underlying shares. The RSUs vest at a rate of one-third at the end of each of the first three years following the date of grant. Historically, the Company settled the RSUs that vested with shares and cash.

A continuity of the number of RSUs, including fair value ("FV") which are outstanding at the end of the current year and as the end of the prior years ended December 31, 2023 and 2022 are as follows:

	For the years ended December 31,			
	2024		2023	
	# of RSUs	FV/Unit	# of RSUs	FV/Unit
RSUs outstanding, start of the year	-	-	348,334	\$ 0.21
Granted	1,035,000	\$ 0.14	-	-
Common shares issued	-	-	(256,619)	\$ (0.26)
Payroll withholdings settled in cash	-	-	(91,715)	\$ (0.23)
Forfeited	(120,000)	\$ (0.14)	-	-
RSUs outstanding, end of the year	915,000	\$ 0.155	-	-

  

	For the year ended December 31,	
	2022	
	# of RSUs	FV/Unit
RSUs outstanding, start of the year	696,666	\$ 0.61
Granted	-	-
Common shares issued	(212,304)	\$ (0.58)
Payroll withholdings settled in cash	(136,028)	\$ (0.58)
RSUs outstanding, end of the year	348,334	\$ 0.21

#### Employee Share Purchase Plan:

The ESP Plan allows employees and other individuals determined by the Board to be eligible to contribute a minimum of 1% and a maximum of 10% of their earnings to the plan for the purchase of common shares in the capital of the Company, of which the Company will make an equal contribution. Common shares contributed by the Company may be issued from treasury or acquired through the facilities of the TSX. During 2024, 2023, and 2022 the Company has elected to issue common shares from treasury.

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

A continuity of the number of commons shares under the ESP Plan which are outstanding at the end of the current year and as at the prior years ended December 31, 2023 and 2022 are as follows:

	For the years ended December 31,			
	2024		2023	
	# of shares	\$ amount	# of shares	\$ amount
Purchased by employees	234,974	\$ 41,620	168,515	\$ 36,246
Matched by the Company	234,973	41,619	140,994	30,509
Total Common Shares issued	469,947	83,239	309,509	66,755

  

	For the year ended December 31,	
	2022	
	# of shares	\$ amount
Purchased by employees	105,221	\$ 49,738
Matched by the Company	83,412	39,389
Total Common Shares issued	188,633	89,127

If the employee does not withdraw common shares from the ESP Plan in the first year of their participation, the Company will match an additional 100% of the employee contributions, up to \$15,000 per employee (the “Bonus Match”). As at December 31, 2024 the Company has accrued \$nil for the Bonus Match (\$nil as at December 31, 2023).

#### Compensation Expense:

On October 1, 2023 the Company entered into a service agreement with a marketing consultant to provide sales and market services to introduce potential customers to the SFD<sup>®</sup> technology, attend trade shows, and update the Company’s market systems. The consultant agreed to be compensated in Common Shares only for approximately US\$16,000 per month, based on the five-day volume average price at the end of each month until February 29, 2024. 634,439 common shares were due to the marketing consultant on December 31, 2024. (360,139 common shares at December 31, 2023.)

#### Subsequent Events:

On February 24, 2025 the Company granted 1,400,000 incentive stock options at a strike price of \$0.203 to directors of the Company. These incentive stock options will vest upon the achieving of a trailing twelve-month free cash flow per share of \$0.10.

On February 24, 2025 the Company granted 1,875,000 RSUs to employees and officers which will vest over a three-year period.

634,439 common shares were issued to the marketing consultant on January 29, 2025.

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

### 18. Income Tax Expense

Payments made to NXT for services rendered to clients and branch offices in certain countries may be subject to foreign income and withholding taxes. Such taxes incurred are only recoverable in certain limited circumstances, including potential utilization in Canada as a foreign tax credit, or against future taxable earnings from the foreign jurisdictions.

Income tax expense is different from the expected amount that would be computed by applying the statutory Canadian federal and provincial income tax rates to NXT's income (loss) before income taxes as follows:

	For the years ended December 31,		
	2024	2023	2022
Net loss before income taxes	\$ (9,077,795)	\$ (5,451,112)	\$ (6,733,076)
Canadian statutory income tax rate	23.0%	23.0%	23.0%
Income tax (recovery) at statutory income tax rate	(2,087,893)	(1,253,756)	(1,548,607)
Effect of non- deductible expenses and other items:			
Stock-based compensation and other expenses	92,142	58,801	53,379
Change in statutory tax rates	-	-	(11,997)
Foreign exchange adjustments	160,597	2,754	-
True-up	(14,841)	(10,060)	(3,280)
US loss expiry and Other	1,530	437,330	(33,113)
Change in valuation allowance	1,848,465	764,931	1,543,618
Income tax expense (recovery)	-	-	-

A valuation allowance has been provided for the Company's deferred income tax assets due to uncertainty regarding the amount and timing of their potential future utilization, as follows:

	For the years ended December 31,		
	2024	2023	2022
Net operating losses carried forward:			
Canada (expiration dates 2027 to 2044)	\$ 11,076,403	\$ 9,594,511	\$ 9,136,353
USA (expiration dates 2025 to 2026)	3,921	5,631	169,359
Timing differences on property & equipment, Right of Use of Assets, Lease obligations and Financing	1,784,071	1,806,446	1,726,603
SRED Expenditures	676,518	676,518	676,518
Foreign Tax Credit	285,772	285,772	285,772
	13,826,685	12,368,878	11,994,605
Intellectual property	(2,247,441)	(2,638,099)	(3,028,757)
Less valuation allowance	(11,579,244)	(9,730,779)	(8,965,848)
	-	-	-

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### 19. Financial instruments

##### Non-derivative financial instruments:

The Company's non-derivative financial instruments consist of cash and cash equivalents, accounts receivable, accounts payables and accrued liabilities, convertible debentures, and long-term debt. The carrying value of these financial instruments, excluding long-term debt, approximates their fair values due to their short terms to maturity. The Company has determined that long-term debt approximates its fair value as may be settled early at face value at the Company's discretion.

##### Credit Risk

Credit risk arises from the potential that the Company may incur a loss if counterparty to a financial instrument fails to meet its obligation in accordance with agreed terms. The Company's financial instruments that are exposed to concentrations of credit risk consist primarily of cash and cash equivalents and accounts receivable. The carrying value of cash and cash equivalents and accounts receivable reflects management's assessment of maximum exposure to credit risk. At December 31, 2024, cash and cash equivalents included balances in bank accounts placed with financial institutions with investment grade credit ratings. The Company manages accounts receivable credit risk by requiring advance payments before entering into certain contract milestones and when possible, accounts receivable insurance.

##### Foreign Exchange Risk

The Company is exposed to foreign exchange risk in relation to its holding of significant US\$ balances in cash and cash equivalents, accounts receivable, deposits, accounts payables, accrued liabilities, deferred revenue, convertible debentures, and lease obligations, and entering into SFD<sup>®</sup> survey contracts which are priced in US\$. The Company does not currently enter into hedging contracts, but to mitigate exposure to fluctuations in foreign exchange the Company uses strategies to reduce the volatility of United States Dollar assets including converting excess United States dollars to Canadian dollars. As at December 31, 2024, the Company held net United States dollar liabilities totaling approximately US\$7,130,144. Accordingly, a hypothetical 10% change in the value of one United States dollar expressed in Canadian dollars as at December 31, 2024 would have had an approximately \$1,025,671 effect on the unrealized foreign exchange gain or loss for the year.

#### 20. Change in non-cash operating working capital

The changes in non-cash operating working capital balances are comprised of:

	For the years ended December 31,		
	2024	2023	2022
Accounts receivable	\$ 1,722,665	\$ (1,835,922)	\$ 784,502
Prepaid expenses	(221,126)	(17,516)	229,279
Accounts payable and accrued liabilities	(438,199)	559,351	741,326
Deferred revenue	805,656	-	-
	<u>1,868,996</u>	<u>(1,294,087)</u>	<u>1,755,107</u>

## NXT ENERGY SOLUTIONS INC.

### Notes to the Consolidated Financial Statements

As at and for the years ended December 31, 2024, 2023 and 2022

(Expressed in Canadian dollars unless otherwise stated)

#### 21. Geographic information

The Company generates revenue from its SFD<sup>®</sup> survey system that enables the clients to focus their exploration decisions concerning land commitments, data acquisition expenditures and prospect prioritization on areas with the greatest potential. NXT conducts all of its survey operations from its head office in Canada, and occasionally maintains administrative offices in foreign locations if and when needed. Revenue fluctuations are a normal part of SFD<sup>®</sup> survey system sales and can vary significantly year-over-year.

Revenues for the years ended December 31, 2024 and 2023 was generated solely from the Hydrocarbon Right. Revenues for the year ended December 31, 2023 was generated from one customer.

	2024	2023	2022
International	\$ 644,294	\$ 2,145,716	\$ -
Canada	-	-	-
	<u>644,294</u>	<u>2,145,716</u>	<u>-</u>

#### 22. Other related party transactions

One of the members of NXT's Board of Directors is a partner in a law firm which provides legal advice to NXT. Accounts payable and accrued liabilities include a total of \$55,455 (\$36,938 as at December 31, 2023) payable to this law firm.

Another member of Board is a board member of Pana Holdings Mauritius, the parent company of Ataraxia, which holds convertible debentures (Note 10). Accounts payable and accrued liabilities include a total of \$40,011 (US\$27,814), (\$19,699 or US\$14,890, as at December 31, 2023) to Ataraxia for accrued interest.

A third member of Board is an employee of MCAPM LP, which holds convertible debentures (Note 10). Accounts payable and accrued liabilities include a total of \$57,063 (US\$39,669) to Mork Capital for accrued interest.

All members of the Board elected to have most of their Board fees payable at December 31, 2023 (Note 10) converted into the November Debentures, for a total of US\$147,000 (CDN\$196,686). Accounts payable and accrued liabilities include a total of \$4,680 (US\$3,253), (\$nil as at December 31, 2023) to Board members for accrued interest.

Accounts payable and accrued liabilities include \$201,218 (\$228,199 as at December 31, 2023) for Board fees and \$35,250 (\$98,708 as at December 31, 2023) for management compensation.

NXT ENERGY SOLUTIONS INC.

Notes to the Consolidated Financial Statements  
As at and for the years ended December 31, 2024, 2023 and 2022  
(Expressed in Canadian dollars unless otherwise stated)

Related party expenses

	For the years ended December 31,		
	2024	2023	2022
Legal Fees	\$ 164,373	\$ 129,600	\$ 92,308
Interest Expense <sup>1</sup> .	\$ 441,986	\$ 107,792	\$ -
Board of director fees	\$ 182,500	\$ 158,199	\$ 185,000
Management Compensation	\$ 436,526	\$ 389,451	\$ 544,929

1. US\$322,905 for 2024 and US\$79,356 for 2023. Includes interest expense for Ataraxia, Mork Capital and board of directors.

## DESCRIPTION OF SECURITIES REGISTERED UNDER SECTION 12 OF THE EXCHANGE ACT

NXT Energy Solutions Inc. (“NXT” or the “Company”) has the following securities registered pursuant to Section 12(g) of the Securities Exchange Act of 1934 (the “Exchange Act”):

<u>Title of each class</u>	<u>Trading symbol</u>	<u>Name of each exchange on which registered</u>
Common Shares	NSFDF	The OTC Markets QB Exchange

This exhibit contains a description of the rights of the holders of common shares. The following summary is subject to and qualified in its entirety by NXT’s articles of incorporation (the “Articles of Incorporation”), by-laws (the “By-Laws”) and by applicable Alberta and Canadian law, particularly the *Business Corporations Act* (Alberta) (the “ABCA”). This is not a summary of all the significant provisions of the Articles of Incorporation, By-Laws or of Alberta or Canadian law and does not purport to be complete. Capitalized terms used but not defined herein have the meanings given to them in the Company’s annual report on Form 20-F to which this description of securities registered under section 12 of the Exchange Act (the “Description of Securities”) is an exhibit.

## Item 9. General

### Item 9.A.3 Pre-emptive rights

The Articles of Incorporation permit the issuance of an unlimited number of common shares, and shareholders have no pre-emptive rights in connection with such further issuance.

### Item 9.A.5 Type and class of securities

The Company is authorized to issue an unlimited number of common shares, no par value. All common shares are issued in registered form and there are not restrictions on the free transferability of such common shares, except for any transfer restrictions imposed by applicable securities laws.

### Item 9.A.6 Limitations or qualifications

Not applicable.

### Item 9.A.7 Other rights

Not applicable.

## Item 10.B Memorandum and articles of association

### Item 10.B.3 Shareholder rights

#### *Dividends*

The holders of common shares are entitled to receive any dividend declared by the Board of the Company on the common shares, provided that NXT shall be entitled to declare dividends on any other classes of shares without being obliged to declare dividends on the common shares.

NXT is authorized to issue an unlimited number of preferred shares, issuable in one or more series, none of which are issued and outstanding as of the date hereof. With respect to the payment of dividends, NXT’s preferred shares, if issued, would be entitled to preference over the common shares.

*20-F for the year ended December 31, 2024*

### ***Voting Rights***

The holders of common shares are entitled to attend and vote at all meetings of the shareholders of the Company. The directors stand for reelection at the same intervals and cumulative voting is not permitted.

### ***Rights Upon Dissolution***

Subject to the rights, privileges, restrictions and conditions attaching to any other class of NXT's shares, the holders of the common shares are entitled to share equally in such of the Company's property as is distributable to the holders of common shares. With respect to the distribution of assets or the return of capital in the event of liquidation, dissolution or winding-up of the Company, whether voluntary or involuntary, any preferred shares, if issued, would be entitled to preference over the common shares.

### ***Redemption Provisions***

Not applicable.

### ***Sinking fund provisions***

Not applicable.

### ***Capital Calls***

Not applicable.

### ***Discrimination provisions***

Not applicable.

## **Item 10.B.4 Changes to shareholder rights**

### ***Action Necessary to Change the Rights of Shareholders***

NXT's shareholders can authorize the alteration or amendment of the Articles of Incorporation to create or vary the rights, privileges, restrictions and conditions attached to any of NXT's shares by passing a special resolution. However, the rights, privileges, restrictions and conditions attached to any class or series of shares may not be amended unless the shareholders holding shares of that class or series to which the right or special right is attached consent by a separate special resolution (subject to certain exceptions for separate class votes). A special resolution means a resolution passed by a majority of not less than two thirds of the votes cast by the applicable class or series of shareholders who vote in person or by proxy at a meeting.

### ***Amendments to the By-Laws***

NXT's Board may make, amend or repeal any By-Law that regulates the business or affairs of the Company. If the directors make, amend or repeal a by-law, they are required under the ABCA to submit such action to the shareholders at the next meeting of shareholders and the shareholders may confirm, reject or amend the action by an ordinary resolution. If the action is rejected by the shareholders or if the directors do not submit the action to shareholders at the next shareholder meeting, the action will cease to be effective and no subsequent resolution of the directors to make, amend or repeal a by-law that has substantially the same purpose or effect will be effective until it is confirmed by the shareholders.

## **Item 10.B.6 Limitations**

There are no restrictions on the rights of non-resident or foreign shareholders to hold or exercise voting rights with respect to NXT's common shares.

*20-F for the year ended December 31, 2024*



**Item 10.B.7 Change in control**

The Articles of Incorporation and the By-Laws do not contain any change of control limitations with respect to a merger, acquisition or corporate restructuring that involves NXT. Notwithstanding this, the Board of directors, under the general powers conferred to it under NXT's By-Laws, have the authority to approve and invoke a shareholders rights plan that will protect shareholders from unfair, abusive or coercive take-over strategies, including the acquisition or control of NXT by a bidder in a transaction or series of transactions that does not treat all shareholders equally or fairly or that does not afford all shareholders an equal opportunity to share in any premium paid upon an acquisition of control.

**Item 10.B.8 Disclosure of shareholdings**

Although applicable securities laws regarding shareholder ownership by certain persons require disclosure, neither the Articles of Incorporation nor the By-Laws provide for any ownership threshold above which shareholder ownership must be disclosed.

**Item 10.B.9 Differences in the law**

For a discussion of the significant differences of the law applicable to NXT and the law in the US, please see the section entitled 'PROPOSAL NO. 1: CONTINUANCE OF ENERGY EXPLORATION TECHNOLOGIES AS A CORPORATION ORGANIZED UNDER THE LAWS OF THE PROVINCE OF ALBERTA' of the Form Def 14A filed at the time of the Company's continuance from Nevada to Alberta on October 3, 2003.

**Item 10.B.10 Changes in capital**

The requirements imposed by the Articles of Incorporation governing changes in capital are not more stringent than is required by law.

*20-F for the year ended December 31, 2024*



**Approved Option Plan**  
**JUNE 6, 2022**

**1. The Plan**

A stock option plan (the “**Plan**”), pursuant to which options to purchase common shares, or such other shares as may be substituted therefor (“**Shares**”), in the capital of NXT Energy Solutions Inc. (the “**Corporation**”) may be granted to the directors, officers and employees of the Corporation and to consultants retained by the Corporation, is hereby established on the terms and conditions set forth herein.

**2. Purpose**

The purpose of this Plan is to advance the interests of the Corporation by encouraging the directors, officers and employees of the Corporation and consultants retained by the Corporation to acquire Shares, thereby: (i) increasing the proprietary interests of such persons in the Corporation; (ii) aligning the interests of such persons with the interests of the Corporation’s shareholders generally; (iii) encouraging such persons to remain associated with the Corporation and (iv) furnishing such persons with an additional incentive in their efforts on behalf of the Corporation.

**3. Administration**

- (a) This Plan shall be administered by the board of directors of the Corporation (the “**Board**”).
- (b) Subject to the terms and conditions set forth herein, the Board is authorized to provide for the granting, exercise and method of exercise of Options (as defined in Section 3(d) below), all on such terms (which may vary between Options granted from time to time) as it shall determine. In addition, the Board shall have the authority to: (i) construe and interpret this Plan and all option agreements entered into hereunder; (ii) prescribe, amend and rescind rules and regulations relating to this Plan and (iii) make all other determinations necessary or advisable for the administration of this Plan. All determinations and interpretations made by the Board shall be binding on all Participants (as hereinafter defined) and on their legal, personal representatives and beneficiaries.
- (c) Notwithstanding the foregoing or any other provision contained herein, the Board shall have the right to delegate the administration and operation of this Plan, in whole or in part, to a committee of the Board or to the President or any other officer of the Corporation. Whenever used herein, the term “Board” shall be deemed to include any committee or officer to which the Board has, fully or partially, delegated responsibility and/or authority relating to the Plan or the administration and operation of this Plan pursuant to this Section 3.
- (d) Options to purchase the Shares granted hereunder (“**Options**”) shall be evidenced by: (i) an agreement, signed on behalf of the Corporation and by the person to whom an Option is granted, which agreement shall be in such form as the Board shall approve; or (ii) a written notice or other instrument, signed by the Corporation, setting forth the material attributes of the Options.

**4. Shares Subject to Plan**

- (a) Subject to Section 16 below, the securities that may be acquired by Participants upon the exercise of Options shall be deemed to be issued as fully paid and non-assessable Shares of the Corporation. Whenever used herein, the term “Shares” shall be deemed to include any other securities that may be acquired by a Participant upon the exercise of an Option the terms of which have been modified in accordance with Section 16 below.
- (b) The aggregate number of Shares reserved for issuance under this Plan, or any other security-based compensation plan of the Corporation, shall not, at the time of the stock option grant, exceed 10% percent of the total number of issued and outstanding Shares (calculated on a non-diluted basis) unless the Corporation receives the permission of the stock exchange or exchanges on which the Shares are then listed to exceed such threshold.
- (c) If any Option granted under this Plan shall expire or terminate for any reason without having been exercised in full, any un-purchased Shares to which such Option relates shall be available for the purposes of the granting of Options under this Plan.

5. **Maintenance of Sufficient Capital**

The Corporation shall at all times during the term of this Plan ensure that the number of Shares it is authorized to issue shall be sufficient to satisfy the Corporation's obligations under all outstanding Options granted pursuant to this Plan.

6. **Eligibility and Participation**

(a) The Board may, in its discretion, select any of the following persons to participate in this Plan:

- (i) directors of the Corporation;
- (ii) officers of the Corporation;
- (iii) employees of the Corporation; and
- (iv) consultants retained by the Corporation, provided such consultants have performed and/or continue to perform services for the Corporation on an ongoing basis or are expected to provide a service of value to the Corporation;

(any such person having been selected for participation in this Plan by the Board is herein referred to as a **"Participant"**).

(b) **Insider Participation Limits**

- (i) The maximum number of Shares which may be reserved for issuance to **"Insiders"** (as defined in the Toronto Stock Exchange Company Manual) under the Plan and under all other security-based compensation arrangements of the Corporation shall be 10% of the total number of Shares issued and outstanding.
- (ii) The number of Shares issued to Insiders within any one-year period under the Plan and under all other security-based compensation arrangements of the Corporation shall not exceed 10% of the total number of Shares issued and outstanding.
- (iii) The issuance to any one Insider (and such Insider's associates) within a one-year period of a number of Shares under the Plan and under all other security-based compensation arrangements of the Corporation shall not exceed five percent (5%) of the number of Shares issued and outstanding.

7. **Exercise Price**

The Board shall, at the time an Option is granted under this Plan, fix the exercise price at which Shares may be acquired upon the exercise of such Option provided that such exercise price shall not be less than that from time to time permitted under the rules of any stock exchange or exchanges on which the Shares are then listed.

The exercise price of an Option granted shall not be less than the five day volume weighted average of the closing prices of the Shares prior to the date of grant. In addition, the exercise price of an Option must be paid in cash.

8. **Number of Optioned Shares**

The number of Shares that may be acquired under an Option granted to a Participant shall be determined by the Board as at the time the Option is granted, provided that the aggregate number of Shares reserved for issuance to any one Participant under this Plan or any other plan of the Corporation, shall not exceed five percent of the total number of issued and outstanding Shares (calculated on a non-diluted basis) in any 12 month period (and, in the case of consultants and persons retained to perform investor relation activities, shall not exceed two percent in any 12 month period) unless the Corporation receives the permission of the stock exchange or exchanges on which the Shares are listed to exceed such threshold.

## 9. **Term**

The period during which an Option may be exercised (the “**Option Period**”) shall be determined by the Board at the time the Option is granted, subject to any vesting limitations which may be imposed by the Board in its sole unfettered discretion at the time such Option is granted and Sections 12, 13 and 17 below, provided that:

- (a) no Option shall be exercisable for a period exceeding five (5) years from the date the Option is granted unless the Corporation receives the permission of the stock exchange or exchanges on which the Shares are then listed and as specifically provided by the Board and as permitted under the rules of any stock exchange or exchanges on which the Shares are then listed, and in any event, no Option shall be exercisable for a period exceeding ten (10) years from the date the Option is granted;
- (b) no Option in respect of which shareholder approval is required under the rules of any stock exchange or exchanges on which the Shares are then listed shall be exercisable until such time as the Option has been approved by the shareholders of the Corporation;
- (c) the Board may, subject to the receipt of any necessary regulatory approvals, in its sole discretion, accelerate the time at which any Option may be exercised, in whole or in part; and

any Options granted to any Participant must expire within 30 days after the Participant ceases to be a Participant, and within 30 days for any Participant engaged in investor relation activities after such Participant ceases to be employed to provide investor relation activities.

## 10. **Blackout Periods**

A “**Blackout Period**” shall mean a period of time during which the Option holder cannot exercise an Option, or sell the Shares that are issuable pursuant to the exercise of Options, due to applicable policies of the Corporation in respect of insider trading.

Notwithstanding anything else contained herein, if the expiration date for an Option occurs during a Blackout Period applicable to the relevant Option holder, or within 10 business days after the expiry of a Blackout Period applicable to the relevant Option holder, then the expiration date for that Option (the “**Blackout Expiry Date**”) shall be the date that is the tenth business day after the expiry date of the Blackout Period. This Section 10 applies to all Options outstanding under the Plan, and the Blackout Expiry Date may not be amended without the approval of the holders of the Shares of the Corporation.

## 11. **Method of Exercise of Option**

- (a) Except as set forth in Sections 12 and 13 below or as otherwise determined by the Board, no Option may be exercised unless the holder of such Option is, at the time the Option is exercised, a director, officer, employee or consultant of the Corporation.
- (b) Options that are otherwise exercisable in accordance with the terms thereof may be exercised in whole or in part from time to time.
- (c) Any Participant (or his or her legal, personal representative) wishing to exercise an Option shall deliver to the Corporation, at its principal office in the City of Calgary, Alberta:
  - (i) a written notice expressing the intention of such Participant (or his or her legal, personal representative) to exercise his Option and specifying the number of Shares and exercise price in respect of which the Option is exercised; and
  - (ii) a cash payment, certified cheque or bank draft, representing the full purchase price of the Shares in respect of which the Option is exercised. In connection with the exercise of an Option, the Participant (or his or her heirs or administrators) shall follow the Corporation’s procedures and policies relating to the payment or funding of any income tax withholdings applicable to the exercise of the Option, including, where required by the Corporation, the remittance to the Corporation by the Participant (or his or her heirs or administrators) of an amount of cash sufficient to satisfy any withholding requirements relating to the exercise of the Option.
- (d) Upon the exercise of an Option as aforesaid, the Corporation shall use reasonable efforts to forthwith deliver, or cause the registrar and transfer agent of the Shares to deliver, to the relevant Participant (or his or her legal, personal representative) or to the order thereof, a certificate representing the aggregate number of fully paid and non-assessable Shares in respect of which the Option has been duly exercised.

**12. Ceasing to be a Director, Officer, Employee or Consultant**

If any Participant shall cease to hold the position or positions of director, officer, employee or consultant of the Corporation (as the case may be) for any reason other than death or permanent disability, his Option will terminate at 4:00 p.m. (Mountain time) on the earlier of the date of the expiration of the Option Period and 30 days after the date such Participant ceases to hold the position or positions of director, officer, employee or consultant of the Corporation as the case may be, and ceases to actively perform services for the Corporation. An Option granted to a Participant who performs Investor Relations services on behalf of the Corporation shall terminate 30 days after the date of termination of the employment or cessation of services being provided and shall be subject to Exchange policies and procedures for the termination of Options for Investor Relations services. For greater certainty, the termination of any Options held by the Participant, and the period during which the Participant may exercise any Options, shall be without regard to any notice period arising from the Participant's ceasing to hold the position or positions of director, officer, employee or consultant of the Corporation (as the case may be).

Neither the selection of any person as a Participant nor the granting of an Option to any Participant under this Plan shall: (i) confer upon such Participant any right to continue as a director, officer, employee or consultant of the Corporation, as the case may be; or (ii) be construed as a guarantee that the Participant will continue as a director, officer, employee or consultant of the Corporation, as the case may be.

**13. Death or Permanent Disability of a Participant**

In the event of the death or permanent disability of a Participant, any Option previously granted to him shall be exercisable until the end of the Option Period or until the expiration of 12 months after the date of death or permanent disability of such Participant, whichever is earlier, and then, in the event of death or permanent disability, only:

- (a) by the person or persons to whom the Participant's rights under the Option shall pass under the terms of the Participant's will or by applicable law; and
- (b) to the extent that the Participant was entitled to exercise the Option as at the date of their death or permanent disability.

**14. Rights of Participants**

No person entitled to exercise any Option granted under this Plan shall have any of the rights or privileges of a shareholder of the Corporation in respect of any Shares issuable upon exercise of such Option until such Shares have been paid for in full and issued to such person.

**15. Proceeds from Exercise of Options**

The proceeds received by the Corporation from the exercise of Options shall be added to the general funds of the Corporation and shall thereafter be used from time to time for such corporate purposes as the Board may determine and direct.

**16. Adjustments**

- (a) The number of Shares subject to the Plan shall be increased or decreased proportionately in the event of the subdivision or consolidation of the outstanding Shares of the Corporation, and in any such event a corresponding adjustment shall be made to the number of Shares deliverable upon the exercise of any Option granted prior to such event without any change in the total price applicable to the unexercised portion of the Option, but with a corresponding adjustment in the price for each Share that may be acquired upon the exercise of the Option. In case the Corporation is reorganized or merged or consolidated or amalgamated with another corporation, appropriate provisions shall be made for the continuance of the Options outstanding under this Plan and to prevent any dilution or enlargement of the same.
- (b) Adjustments under this Section 16 shall be made by the Board, whose determination as to what adjustments shall be made, and the extent thereof, shall be final, binding and conclusive. No fractional Shares shall be issued upon the exercise of an Option following the making of any such adjustment.

## **17. Change of Control**

Notwithstanding the provisions of Section 12 or any vesting restrictions otherwise applicable to the relevant Options, in the event of a sale by the Corporation of all or substantially all of its assets or in the event of a change of control of the Corporation, each Participant shall be entitled to exercise, in whole or in part, the Options granted to such Participant hereunder (including any unvested portions), either during the term of the Option or within 90 days after the date of the sale or change of control, whichever first occurs.

For the purpose of this Plan, change of control of the Corporation means and shall be deemed to have occurred upon any one of:

- (a) the acceptance by the holders of Shares of the Corporation, representing in the aggregate, more than 50 percent of all issued Shares of the Corporation, of any offer, whether by way of a takeover bid or otherwise, for all or any of the outstanding Shares of the Corporation; or
- (b) the acquisition, by whatever means, by a person (or two or more persons who, in such acquisition, have acted jointly or in concert or intend to exercise jointly or in concert any voting rights attaching to the Shares acquired), directly or indirectly, of beneficial ownership of such number of Shares or rights to Shares of the Corporation, which together with such person's then owned Shares and rights to Shares, if any, represent (assuming the full exercise of such rights to voting securities) more than 50 percent of the combined voting rights of the Corporation's then outstanding Shares; or
- (c) the entering into of any agreement by the Corporation to merge, consolidate, amalgamate, initiate an arrangement or be absorbed by or into another corporation; or
- (d) the passing of a resolution by the Board or shareholders of the Corporation to substantially liquidate the assets or wind-up the Corporation's business or significantly rearrange its affairs in one or more transactions or series of transactions or the commencement of proceedings for such a liquidation, winding-up or re-arrangement (except where such re-arrangement is part of a bona fide reorganization of the Corporation in circumstances where the business of the Corporation is continued and where the shareholdings remain substantially the same following the re-arrangement); or
- (e) individuals who were members of the Board of the Corporation immediately prior to a meeting of the shareholders of the Corporation involving a contest for or an item of business relating to the election of directors, not constituting a majority of the Board following such election.

## **18. Transferability**

All benefits, rights and Options accruing to any Participant in accordance with the terms and conditions of this Plan shall be non-transferable and non-assignable unless specifically provided herein. During the lifetime of a Participant, any Options granted hereunder may only be exercised by the Participant and in the event of the death or permanent disability of a Participant, by the person or persons to whom the Participant's rights under the Option pass under the terms of the Participant's will or by applicable law.

## **19. Amendment and Termination of Plan**

- (a) The Board may amend, suspend or terminate the Plan at any time, provided that no such amendment, suspension or termination may:
  - (i) be made without obtaining any required regulatory or shareholder approvals; or
  - (ii) adversely affect the rights of any Participant with respect to an Option which has neither expired nor been terminated at the time of any such amendment, without the consent of the Participant.

- (b) Subject to section 19(c) of the Plan, the Board may from time to time, by resolution and without approval of the shareholders of the Corporation, make amendments to the Plan or any Option, including but not limited to, the following:
  - (i) an amendment to the date upon which an Option may expire, unless the amendment extends the expiry of an Option held by an Insider;
  - (ii) an amendment to the terms upon which and/or the date or dates upon which an Option becomes vested;
  - (iii) an addition to, deletion from or alteration of the Plan or an Option that is necessary to comply with applicable law or the requirements of any regulatory authority or the Toronto Stock Exchange;
  - (iv) an amendment to correct or rectify any ambiguity, defective provision, error or omission in the Plan or an Option; and
  - (v) any other amendment that does not require shareholder approval under section 19(c) of the Plan.
- (c) Approval of the shareholders of the Corporation will be required for the following amendments to the Plan or any Option:
  - (i) any increase in the number of Shares reserved for issuance under the Plan;
  - (ii) any change to the categories of individuals eligible to be selected for grants of Options, where such change may broaden or increase the participation of Insiders under the Plan;
  - (iii) the provision of financial assistance to a Participant in connection with the exercise of Options;
  - (iv) any reduction in the purchase price of an Option;
  - (v) any extension of the expiry date of an Option, except as otherwise provided herein; and
  - (vi) an amendment that would permit Options to be transferable or assignable other than for normal estate settlement purposes.
- (d) For greater certainty, other than the amendments set forth in section 19(c) of the Plan, any other amendment to the Plan or the Options issued thereunder does not require the approval of shareholders of the Corporation.

## 20. **Necessary Approvals**

The obligation of the Corporation to issue and deliver Shares in accordance with this Plan and Options granted hereunder is subject to applicable securities legislation and to the receipt of any approvals that may be required from any regulatory authority or stock exchange having jurisdiction over the securities of the Corporation. If Shares cannot be issued to a Participant upon the exercise of an Option for any reason whatsoever, the obligation of the Corporation to issue such Shares shall terminate and any funds paid to the Corporation in connection with the exercise of such Option will be returned to the relevant Participant as soon as practicable.

## 21. **Stock Exchange Rules**

This Plan and any option agreements entered into hereunder shall comply with the requirements from time to time of the stock exchange or exchanges on which the Shares are listed.

## 22. **Right to Issue Other Shares**

The Corporation shall not by virtue of this Plan be in any way restricted from declaring and paying stock dividends, issuing further Shares, varying or amending its share capital or corporate structure or conducting its business in any way whatsoever.

23. **Notice**

Any notice required to be given by this Plan shall be in writing and shall be given by registered mail, postage prepaid or delivered by courier or by facsimile transmission addressed, if to the Corporation, at its principal address in Calgary, Alberta (Attention: Chairman of the Board); or if to a Participant, to their last known address as it appears on the books of the Corporation; or if to any other person, to the last known address of such person.

24. **Gender**

Whenever used herein words importing the masculine gender shall include the feminine and neuter genders and vice versa.

25. **Interpretation**

This Plan will be governed by and construed in accordance with the laws of the Province of Alberta.





### *Insider Trading Policy*

Insider trading is buying or selling stock while possessing inside information. Employees who know any “material” information about the Company that has not been disclosed to the public (“inside information”) may not buy or sell NXT stock until a “reasonable time” (defined as a minimum of 2 full business days) has passed after the information has been disclosed to the public, which is normally in the form of a news or press release which is formally issued by NXT on a newswire service. To determine what is a “reasonable time” in any given situation, queries should be directed to the Chief Financial Officer.

A “blackout” period prohibiting any Insider trading may be imposed periodically by NXT, such as for prior to the public release of scheduled quarterly and year-end financial results (for at least 10 full business days prior to the SEDAR+ filing of same), and prior to news releases related to other significant developments (such as securing a new revenue contract).

Material information is any information that an independent investor might consider important in deciding whether to buy, sell or hold securities such as common shares of NXT. Such information includes financial results; financial forecasts; changes in dividends; possible mergers, acquisitions, divestitures or joint ventures; and information concerning significant discoveries, important product developments, major litigation developments, and major changes in business directions.

Information is considered to be non-public unless it has been adequately disclosed to the public - i.e. by way of public filings with securities regulatory authorities (such as SEDAR in Canada, and EDGAR in the USA), issuance of Company press releases, and may also include Company meetings with members of the press and the public.

The trading of NXT stock and other securities in the market by an employee, based upon material, non-public information, or by others who have acquired material, non-public information from the employee, is prohibited and subjects the user of such information to legal risks, including civil or even criminal penalties, and could prove embarrassing and harmful to the individual and to the Company.

All employees must exercise caution not to disclose inside information to outsiders, either intentionally or inadvertently, under any circumstances, whether at meetings held as part of your business duties or at informal after-hours discussions. In addition, employees can be legally liable if someone outside the Company trades in Company stock based on a “tip” of inside information given by an employee. NXT policy forbids giving confidential information about the Company to outsiders except under limited circumstances as approved by legal counsel. Specific additional legal restrictions on Company stock trading apply to NXT corporate officers and directors, who have been furnished with detailed explanations of these restrictions.

Only authorized officials of the Company are permitted to respond to inquiries for Company information from the media, the financial community, investors and others, and employees are to promptly refer all such inquiries to senior management of the Company. If you have any questions regarding whether certain information is material or if it has been adequately disclosed to the public and the market, you must contact the Corporate Compliance Department, and abstain from trading NXT stock or other securities, or disclosing such information to people outside the Company until you have been informed that the information is not material or has been appropriately disclosed. Severe civil and criminal penalties can be imposed on individuals and corporations convicted of violations.

*NXT Insider Trading Policy*



### ***Insider Trading***

US and Canadian securities laws prohibit the trading directly or indirectly in securities on the basis of confidential information; revealing such information to others who may trade in the securities; and recommending the purchase or sale of securities based on confidential information.

This applies not only to NXT securities but to any other company's securities (ex. NXT client / customers) that are publicly traded.

These prohibitions are sometimes referred to as the "insider trading rules" and apply to persons regardless of their position within a company or whether or not they are employed by the company to which the confidential information pertains.

To avoid violations of insider trading rules:

- Do not trade in the securities of NXT or any other company (including NXT's customers or suppliers) while in possession of confidential information. This includes selling shares obtained through the exercise of stock options.
- Observe all company Blackout period restrictions.
- Exercise due care in protecting all (NXT and client related) confidential information. Avoid casual conversations in public areas and store files containing confidential information in secure, password restricted locations.
- Immediately report any disclosure of confidential information, whether inadvertent or otherwise, to the CEO.

If you have questions as to whether or not information you may have is confidential, you are encouraged to consult with senior management of the Company prior to engaging in any securities transaction, in order to avoid any coincidence of timing that may, in retrospect, present an appearance of impropriety.

*NXT Insider Trading Policy*

**CERTIFICATION**

I, Bruce G. Wilcox, Director and Chief Executive Officer of NXT Energy Solutions Inc., certify that:

1. I have reviewed this annual report on Form 20-F of NXT Energy Solutions Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;
4. The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting; and
5. The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's Board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: April 29, 2025

"/s/ Bruce G. Wilcox"

**Bruce G. Wilcox**

Director and Chief Executive Officer

*20-F for the year ended December 31, 2024*

**CERTIFICATION**

I, Eugene Woychyshyn, Director and VP of Finance and Chief Financial Officer, certify that:

1. I have reviewed this annual report on Form 20-F of NXT Energy Solutions Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;
4. The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the Company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting; and
5. The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's Board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Dated: April 29, 2025

/s/ Eugene Woychyshyn  
Eugene Woychyshyn

*20-F for the year ended December 31, 2024*

Certification  
Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to  
Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Chapter 63, Title 18 U.S.C. §§ 1350(a) and (b)), the undersigned hereby certifies in their capacity as officers of NXT Energy Solutions Inc. (the “Company”) that the Annual Report of the Company on Form 20-F for the year ended December 31, 2024 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and that the information contained in such Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: April 29, 2025

“/s/ Bruce G. Wilcox”

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**Bruce G. Wilcox**

Director and Chief Executive Officer

**A SIGNED ORIGINAL OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906 HAS BEEN PROVIDED TO NXT ENERGY SOLUTIONS INC. AND WILL BE RETAINED BY NXT ENERGY SOLUTIONS INC. AND FURNISHED TO THE SECURITIES AND EXCHANGE COMMISSION OR ITS STAFF UPON REQUEST.**

*20-F for the year ended December 31, 2024*

Certification  
Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to  
Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Chapter 63, Title 18 U.S.C. §§ 1350(a) and (b)), the undersigned hereby certifies in his capacity as an officer of NXT Energy Solutions Inc. (the “Company”) that the Annual Report of the Company on Form 20-F for the year ended December 31, 2024 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and that the information contained in such Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: April 29, 2025

/s/ Eugene Woychyshyn  
\_\_\_\_\_  
Eugene Woychyshyn  
Director and VP Finance and CFO

**A SIGNED ORIGINAL OF THIS WRITTEN STATEMENT REQUIRED BY SECTION 906 HAS BEEN PROVIDED TO NXT ENERGY SOLUTIONS INC. AND WILL BE RETAINED BY NXT ENERGY SOLUTIONS INC. AND FURNISHED TO THE SECURITIES AND EXCHANGE COMMISSION OR ITS STAFF UPON REQUEST.**

*20-F for the year ended December 31, 2024*

**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in the Annual Report on Form 20-F of our auditor's report dated March 27, 2025 with respect to the consolidated financial statements of NXT Energy Solutions Inc. as at December 31, 2024 and December 31, 2023 and for the years then ended, as filed with the United States Securities and Exchange Commission.

We also consent to the incorporation by reference in the Registration Statement No. 333- 146890 on Form S-8 of our auditor's report dated March 27, 2025 with respect to the consolidated financial statements of NXT Energy Solutions Inc. as at December 31, 2024 and December 31, 2023 and for the years then ended, as incorporated by reference in the Annual Report on Form 20-F of NXT Energy Solutions Inc. for the years ended December 31, 2024 and December 31, 2023, as filed with the United States Securities and Exchange Commission.

A handwritten signature in black ink that reads 'MNP LLP'.

Chartered Professional Accountants  
Calgary, Canada  
April 29, 2025

**MNP LLP**  
Suite 2000, 112 - 4th Avenue SW, Calgary AB, T2P 0H3

1.877.500.0792    T: 403.263.3385    F: 403.269.8450



**NXT ENERGY SOLUTIONS INC.**

**Management's Discussion and Analysis**

**For the year ended**

**December 31, 2024**

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## Management's Discussion and Analysis

This management's discussion and analysis ("MD&A") was prepared by management of NXT Energy Solutions Inc. ("NXT", "we", "our" or the "Company") based on information available as at March 27, 2025 and unless otherwise stated, has been approved by the Board of Directors of the Company (the "Board"), and should be reviewed in conjunction with the audited consolidated financial statements and related notes for the period ended December 31, 2024 (the "audited consolidated financial statements"). This MD&A covers the unaudited three and audited twelve-month periods ended December 31, 2024, with comparative amounts for the unaudited three and audited twelve-month periods ended December 31, 2023.

Our functional and reporting currency is the Canadian dollar. All references to "dollars", "\$" and "CDN\$" in this MD&A are to Canadian dollars unless specific reference is made to United States dollars ("US\$").

NXT<sup>®</sup> and SFD<sup>®</sup> are registered trademarks of NXT in Canada and the United States.

## Advisories

### *Forward-looking Information*

Certain statements contained in this MD&A constitute "forward-looking information" within the meaning of applicable securities laws. These statements typically contain words such as "anticipate", "believe", "would", "could", "should", "estimate", "expect", "strategy", "may", "plan", "ensure", "will", "remain", "continue" and similar words and phrases suggesting future outcomes or an outlook. Forward-looking statements in this document include, but are not limited to:

- Execution of the African SFD<sup>®</sup> Survey (as defined herein);
- Execution of the Southeast Asia SFD<sup>®</sup> Survey (as defined herein);
- Execution of the AL-Haj Enterprises Private Limited SFD<sup>®</sup> Survey (as defined herein);
- the Company's ability to successfully work with Synergy and Ataraxia (each as defined herein) to develop future business in the African continent;
- the Company's expectation that the Geothermal Right (as defined herein) will amortize on a straight-line basis over its estimated useful life of 20 years;
- that the SFD<sup>®</sup> technology may reduce the need for seismic in wide-area reconnaissance;
- receipt of funding under the NRC IRAP (as defined herein);
- expectations regarding maintenance performed on the Company's leased aircraft;
- expectations regarding the future vesting, settlement and expiry of securities issued in connection with the Company's share-based compensation plans;
- expectations regarding the amortization of the Company's intellectual property ("IP") assets;
- the Company's ability to achieve the remaining milestone with respect to the consideration (as defined herein) owing to the estate of Mr. George Liszicasz, the future payment of such Consideration to the estate of Mr. George Liszicasz, and the satisfaction of the conditions thereto (including with respect to cash balances, receipt of funds, and the execution and completion of contracts);
- the Company's ability to use alternative strategies to reduce the volatility of US dollar liabilities;
- the development, commercialization, and protection of the SFD<sup>®</sup> technology for geothermal resource exploration;

- the extent to which expanding the Company's scope of business to include exploring for both hydrocarbon and geothermal resources is anticipated to result in an expansion of its scope of revenue sources;
- the Company's pursuit of opportunities to secure new revenue contracts;
- expectations regarding competition within the industries in which the Company operates;
- the Company's ability to continue operating as a going concern;
- the Company's ability to continue making payments on its office lease, its aircraft lease and the effects of any default under either such lease;
- the Company's ability to pay amounts owing under the 2023 Ataraxia Debentures, the 2024 Ataraxia Debentures, the November Debentures, and the 2024 Debentures (each as defined herein) (together, the "Debentures");
- expectations regarding the future conversion of the Debentures into common shares or preferred shares of the Company, as applicable;
- the Company's ability to repay the amounts owing under the HASCAP Loan (as defined herein) over a nine-year period;
- the timing and value of payments owing under the Company's office lease;
- the Company's belief that its current cash position is not expected to be sufficient to meet obligations and planned operations for the year beyond the date that the audited consolidated financial statements have been issued;
- expectations regarding the Company's DCPs and ICFR (each as defined herein), including the Company's ability to further adjust such DCPs and ICFR to mitigate material weaknesses going forward;
- estimates related to the Company's future financial position and liquidity, including certain contractual obligations; and
- the Company's general business strategies and objectives.

Such forward-looking information is based on a number of assumptions which may prove to be incorrect. Assumptions have been made with respect to the following matters, in addition to any other assumptions identified in this document:

- our ability to develop and market our SFD<sup>®</sup> technology and services to current and new customers;
- our belief that our SFD<sup>®</sup> technology is technically superior to other airborne survey systems;
- our ability to source personnel and equipment in a timely manner and at an acceptable cost;
- our ability to obtain all permits and approvals required;
- our ability to obtain financing on acceptable terms;
- our ability to obtain insurance to mitigate the risk of default on client billings;
- our assessment of the office lease being reasonable;
- our assessment of potential indicators of impairment and recognition of SFD<sup>®</sup> related revenue;
- the estimated minimum annual commitments for the Company's lease components;
- foreign currency exchange and interest rates;
- general business, economic, and market conditions (including global commodity prices and inflation); and
- approval of the next phase of the NRC IRAP project.

Although NXT believes that the expectations reflected in such forward-looking information are reasonable, readers are cautioned not to place any undue reliance on them as NXT can give no assurance that such expectations will prove to be correct. Forward-looking information is based on expectations, estimates, and projections that involve a number of risks and uncertainties, which could cause actual results to differ materially from those anticipated by NXT and are described in the forward-looking information. Material risks and uncertainties include, but are not limited to:

- the ability of management to execute its business plan, including their ability to secure additional new revenue contracts;
- health, safety, and the environmental factors;
- our ability to develop and commercialize the geothermal technology;
- our ability to service existing debt;
- our ability to protect and maintain our IP and rights to our SFD<sup>®</sup> technology;
- our reliance on a limited number of key personnel;
- our reliance on a single aircraft;
- our reliance on a limited number of clients;
- counterparty credit risk;
- foreign currency and interest rate fluctuations;
- the likelihood that the Company's DCPs and ICFR (each as defined herein) will prevent or detect material misstatements in our audited consolidated financial statements;
- changes in, or in the interpretation of, laws, regulations, or policies; and
- general business, economic, and market conditions (including global commodity prices).

For more information relating to risks, see the section titled “*Risk and Uncertainties*” in this MD&A and the section titled “*Risk Factors*” in NXT’s most recently filed Annual Information Form (“AIF”). Except as required by applicable securities law, NXT undertakes no obligation to update publicly or revise any forward-looking statements or information, whether as a result of new information, future events or otherwise. Accordingly, readers are cautioned not to place undue reliance on forward-looking statements.

## **Financial Outlook**

This MD&A contains future-oriented financial information and financial outlook information (collectively, “FOFI”) about expectations regarding financial results which are subject to the same assumptions, risk factors, limitations and qualifications as set out under the heading “Forward-Looking Information”. The actual financial results of the Company may vary from the amounts set out herein and such variation may be material. The Company and its management believe that the financial outlook has been prepared on a reasonable basis, reflecting management’s best estimates and judgments, and the FOFI contained in this MD&A has been approved by management as of the date hereof. However, because this information is in part subjective and subject to numerous risks, it should not be relied on as necessarily indicative of future results. Except as required by applicable securities laws, the Company undertakes no obligation to update such FOFI. FOFI contained in this MD&A has been made as of the date hereof and is provided for the purpose of providing further information about the Company’s anticipated future business operations. Readers are cautioned that the FOFI contained in this MD&A should not be used for purposes other than for which it is disclosed herein.

## ***Non-GAAP Measures***

NXT’s accompanying audited consolidated financial statements were prepared in accordance with accounting principles generally accepted in the United States of America (“US GAAP”). The Company has consistently used US GAAP for the eight most recently completed quarters.

This MD&A includes references to net working capital, which does not have a standardized meaning prescribed by US GAAP and may not be comparable to similar measures being presented by other entities. Net working capital is the difference between current assets and current liabilities. It is composed of cash and cash equivalents, accounts receivable, prepaid expenses and deposits, accounts payable and accrued liabilities, convertible debentures, the current portion of long-term debt and the current portion of the Company's lease obligations. Net working capital can be used by investors and management to assess liquidity at a particular point in time. See "*Liquidity and Capital Resources – Net Working Capital*" for further information.

### Description of the Business

NXT is a Calgary-based technology company whose proprietary airborne SFD<sup>®</sup> survey system ("SFD<sup>®</sup>"), applied in numerous basins around the world, uses the principles of quantum mechanics to infer stress anomalies of exploration interest. The method can be used both onshore and offshore to remotely identify areas conducive to fluid entrapment in order to recommend areas with commercial hydrocarbon and/or geothermal potential. The SFD<sup>®</sup> survey system enables our clients to focus their exploration decisions concerning land commitments, data acquisition expenditures and prospect prioritization on areas with the greatest potential. SFD<sup>®</sup> is environmentally friendly and unaffected by ground security issues or difficult terrain and is the registered trademark of NXT.

### Financial and Operational Highlights

Key financial and operational highlights for Q4-24 are summarized below:

- on September 24, 2024 the Company announced that it entered into a contract with its Strategic Alliance Partner, Synergy E&P Limited ("Synergy") to provide a repeat SFD<sup>®</sup> survey in Africa for an oil and gas exploration company. The Company mobilized for this SFD<sup>®</sup> survey on December 30, 2024. In January 2025, NXT completed SFD<sup>®</sup> data acquisition over 14 flight days for the SFD<sup>®</sup> survey in Africa. NXT's interpretation and recommendations are expected to be delivered during the second quarter of 2025;
- the Company was awarded an SFD<sup>®</sup> survey by AL-Haj Enterprises Private Limited in the Northern Suleiman Fold Belt, to commence in Q3-25;
- the Company's SFD<sup>®</sup> was awarded "Best Exploration Technology" at the 2024 Gulf Energy Information Excellence Awards;
- the Company received US\$900,000 (approximately CDN\$1,227,291) of convertible debentures from Ataraxia Capital, an affiliate of Synergy ("Ataraxia") under the same terms as the subscription agreement signed between Ataraxia and NXT in 2023, except that such debentures are convertible into common shares or preferred shares of the Company at a conversion price of US\$0.24 per share, whereas such conversion price in the 2023 issuance had been US\$0.143 per share;
- cash and short-term investments as at December 31, 2024 was approximately \$0.73 million;
- net working capital was approximately (\$6.68) million as at December 31, 2024 versus approximately (\$1.86) million at December 31, 2023;
- the Company recorded SFD<sup>®</sup>-related revenues of approximately \$0.64 million for YE-24 and \$2.15 million for YE-23;
- a net loss of \$2.80 million was recorded for Q4-24, including stock-based compensation expenses ("SBCE"), amortization expenses and remeasurement gain, all totaling approximately \$0.39 million;

- a net loss of \$9.08 million was recorded for YE-24, including SBCE, amortization expenses and remeasurement loss, all totaling approximately \$2.45 million;
- net loss per common share for Q4-24 was \$0.04 per share (basic) and \$0.04 per share (diluted);
- net loss per common share for YE-24 was \$0.12 per share (basic) and \$0.12 per share (diluted);
- cash flow used in operating activities was approximately \$1.39 million during Q4-24, compared to \$1.47 million used in Q4-23;
- cash flow used in operating activities was approximately \$3.99 million during YE-24, compared to \$4.83 million used in YE-23;
- general and administrative (“G&A”) expenses increased by approximately \$0.28 million (27%) in Q4-24 as compared to Q4-23; and
- G&A expenses increased by approximately \$0.63 million (16%) in YE-24 as compared to YE-23.

#### Selected Annual Information

Figures are given in “(\$)”	YE-24	YE-23	YE-22
Total assets	14,026,301	15,184,760	15,575,295
Lease liabilities	2,301,542	595,517	1,246,723
Convertible debentures	9,174,957	3,355,989	-
Long-term debt	712,963	824,074	935,185
Revenue	644,294	2,145,716	-
Net loss	(9,077,795)	(5,451,112)	(6,733,076)
Net loss per share			
Basic	(0.12)	(0.07)	(0.10)
Diluted	(0.12)	(0.07)	(0.10)

Total assets decreased between YE-22 through YE-24 as cash and short-term investments were used for operating activities offset by revenue recognized from the Turkish SFD<sup>®</sup> Survey (defined below). The Company extended, and at the same time converted its aircraft lease during YE-24 into a three-year capital lease ending in 2027. In addition, the Company extended its office lease until 2030 together with reducing its office space by 31%. During YE-21, the Company entered into the Business Development Bank of Canada’s (“BDC”) Highly Affected Sectors Credit Availability Program and received a loan of \$1 million under such program (the “HASCAP Loan”). The Company anticipates repaying the HASCAP Loan over a nine-year period at approximately \$111,111 per year. There were no SFD<sup>®</sup> surveys in YE-22. YE-23 revenue and reduction in the net loss from YE-22 was the result of the Turkish SFD<sup>®</sup> Survey discussed below. Revenue in YE-24 was from Turkish SFD<sup>®</sup> Surveys, but costs increased due to foreign exchange loss incurred because of the weakening CDN\$, and change in the fair value of convertible debentures.

## Discussion of Operations

### ***SFD<sup>®</sup> Survey in Africa***

On September 24, 2024 the Company announced that it entered into a contract with its Strategic Alliance Partner, Synergy, to provide a second SFD<sup>®</sup> survey for an oil and gas exploration company in Africa (the “African SFD<sup>®</sup> Survey”). NXT completed SFD<sup>®</sup> data acquisition over 14 flight days in January of 2025. NXT’s interpretation of the survey results, and recommendations with respect to such survey, are expected to be delivered during the second quarter of 2025.

### ***SFD<sup>®</sup> Survey in Pakistan***

On November 4, 2024 the Company announced that it entered into a contract to provide an SFD<sup>®</sup> survey for AL-Haj Enterprises Private Limited (the “AL-Haj Enterprises Private Limited SFD<sup>®</sup> Survey”). Data acquisition operations, as well as NXT’s interpretation of the survey results and recommendations with respect to such survey are expected to commence and finish in the fourth quarter of 2025.

### ***SFD<sup>®</sup> Survey in Southeast Asia***

On May 22, 2024 the Company announced that it entered into a contract to provide an SFD<sup>®</sup> survey to an independent oil and gas exploration company in Southeast Asia (the “Southeast Asia SFD<sup>®</sup> Survey”). Data acquisition operations, interpretation of the survey results and recommendations with respect to such survey are expected to commence and be completed in Q2-25. NXT received a mobilization fee of approximately US\$175,253 in Q3-24 for this SFD<sup>®</sup> survey. The SFD<sup>®</sup> survey was originally expected to be conducted in Q3-24, but was delayed due to aircraft scheduling – which is now resolved. This survey represents the Company’s entry into a new, highly active exploration region.

### ***SFD<sup>®</sup> Survey in Türkiye***

On September 5, 2023 the Company announced that it had signed a contract to provide an SFD<sup>®</sup> survey to an independent oil and gas exploration company in Türkiye, which is strategically located at the junction of Eastern Europe, Central Asia and the Middle East (the “Turkish SFD<sup>®</sup> Survey”). NXT delivered the final SFD<sup>®</sup> survey results to its Turkish customer and performed the integration of SFD<sup>®</sup> data with the customers’ existing geological and geophysical data in March 2024. All flight operations related to the data acquisition survey phase were completed in January 2024. As part of NXT’s SFD<sup>®</sup> services, recommendations with rankings are provided to the customer identifying their highest value prospects for exploration. NXT has been fully paid for this survey and is actively pursuing additional SFD<sup>®</sup> survey opportunities in the Turkish region.

### ***Geothermal SFD<sup>®</sup> Survey in Alberta, Canada***

On August 21, 2024 the Company announced that it entered into a contract to provide a geothermal SFD<sup>®</sup> survey to Alberta Geothermal Resource Recovery Inc. (“AGRRI”). The AGRRI survey is an important milestone in NXT’s development of the geothermal application of our SFD<sup>®</sup> technology; our first geothermal survey for a client. The value to NXT is to demonstrate the commerciality of SFD<sup>®</sup> in the geothermal domain. The survey has been performed and results are being reviewed.

## ***Strategic Investment***

On May 24, 2023 the Company entered into a ten-year strategic alliance and associated financing with Synergy which grants Synergy an exclusive license to use, distribute, sub-license, market and sell NXT's SFD<sup>®</sup> solutions in Africa. In addition, on September 30, 2023, NXT extended the exclusive license to include Ataraxia, an affiliate of Synergy.

PE Energy Limited, an affiliate of Synergy and Ataraxia, has performed several commercial projects with NXT in Africa in the past, in addition to the African SFD<sup>®</sup> Survey.

Synergy and Ataraxia, with this arrangement, will be advancing the SFD<sup>®</sup> technology to address energy security and transition in the African continent for both oil and gas and geothermal sources. Synergy, Ataraxia and NXT have and will continue to work closely together to train local technical teams and regulatory authorities on the patented SFD<sup>®</sup> technology. The local content is a commercial advantage for NXT and has shown early signs of increasing our operational efficiency.

Building upon a record of successful collaborations underpinned by the continued market demand in Africa, in 2023 Ataraxia executed a subscription agreement pursuant to which Ataraxia agreed to subscribe for an aggregate of US\$2.3 million convertible debentures (collectively, the "Ataraxia Debentures"), with a subscription price to be advanced in instalments, of which it completed US\$1.4 million during Q3-23. In November 2024 Ataraxia funded the remaining balance of US\$900,000. Please see the section "*Liquidity and Capital Resources – Ataraxia Debentures*" for further information on the Ataraxia Debentures.

## ***Geothermal Rights***

The Company acquired the SFD<sup>®</sup> technology rights for geothermal resources ("Geothermal Right") from NXT's former Chairman, President and Chief Executive Officer ("CEO"), Mr. George Liszicasz (the "Former CEO") on April 18, 2021. One portion of the consideration deliverable by the Company in connection with the acquisition of the Geothermal Right is still outstanding. A US\$200,000 payment will become due in the event that the Company's cash balance exceeds CDN\$5,000,000 due to receipt of specifically defined funds from operations. The Board has determined that it is not probable that the milestone will be achieved, and accordingly, it has not been recognized in the financials.

Progress continues with respect to the development of the geothermal sensor technology. The Company's first project related to such technology with AGGRI is testing, identifying, and analyzing the desired elements of the SFD<sup>®</sup> geothermal sensor response over known geothermal areas, with the ultimate goal of providing a green upstream geophysical service for advancing renewable power initiatives in Canada and abroad. As of the date of this MD&A, the Company funding for the next phase of the National Research Council of Canada Industrial Research Assistance Program ("NRC IRAP") research has not been finalized.

## ***Patents***

In Q1-22, NXT announced its patent application in Brazil has been allowed. As of the date of this MD&A, NXT has been granted SFD<sup>®</sup> patents on its SFD<sup>®</sup> technology in forty-seven jurisdictions, including Brazil (February 2022), India (July 2021), Russia (January 2017), Japan (July 2017), Canada (August 2017), Mexico (September 2017), the United States (two patents were granted in November 2017 and September 2018, respectively), China (April 2018), and Europe (January 2020). These patents protect our proprietary SFD<sup>®</sup> technology and serve as independent third-party recognition of our technological invention.

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## Summary of Operating Results

(Figures are given in “\$”)	Q4-24	Q4-23	YE-24	YE-23
SFD <sup>®</sup> -related revenue	42,222	2,145,716	644,294	2,145,716
Expenses:				
SFD <sup>®</sup> -related costs, net	698,882	1,280,927	2,021,768	2,249,126
General and administrative expenses	1,058,558	775,881	4,045,778	3,420,143
Amortization	482,158	439,869	1,887,013	1,759,473
	2,239,598	2,496,677	7,954,559	7,428,742
Other Expenses (income):				
Interest expense, net	224,629	77,901	750,611	160,262
Foreign exchange (gain) loss	566,911	(5,109)	574,106	(8,028)
Intellectual property and other	(2,745)	1,948	146,279	15,852
Loss (gain) on fair value remeasurement	(185,589)	-	296,534	-
	603,206	74,740	1,767,530	168,086
Loss before income taxes	(2,800,582)	(425,701)	(9,077,795)	(5,451,112)
Income tax expense	-	-	-	-
Net loss and comprehensive loss	(2,800,582)	(425,701)	(9,077,795)	(5,451,112)
Net loss per share – basic	(0.04)	(0.01)	(0.12)	(0.07)
Net loss per share – diluted	(0.04)	(0.01)	(0.12)	(0.07)

**Quarterly operating results.** Net loss for Q4-24 compared to Q4-23 increased by \$2,374,881 and by \$0.03 per share-basic. The Company recorded SFD<sup>®</sup>-related revenue in both quarters. In Q4-23 SFD<sup>®</sup>-related revenue was for the Turkish SFD<sup>®</sup> Survey. The \$582,045 decrease in SFD<sup>®</sup>-related costs, net were the additional costs incurred on the Turkish SFD<sup>®</sup> Survey in Q4-23. Also, they were lower in Q4-24 due to the aircraft lease being converted to a finance lease and payments being applied to the lease liability, and not expensed. This was offset by required maintenance continued to be performed on the aircraft to get it prepared for the 2025 SFD<sup>®</sup> Surveys (defined herein). G&A expenses increased by \$282,677 or 36%, compared to Q4-23, due to commissions and retainers on SFD<sup>®</sup>-related revenue, expenses from the convertible debentures, and an increase in business development activity. Amortization expense increased \$42,289 due to the aircraft now being treated as a finance lease. Interest expense, net, increased by \$146,728 in Q4-24 versus Q4-23 due to the 2024 Debentures and 2024 Ataraxia Debentures being issued by the Company. Foreign exchange loss (gain) worsened by \$572,020 as the CDN\$ weakened at December 31, 2024 versus September 30, 2024 and strengthened at December 31, 2023 versus September 30, 2023, with the Company having a net liability in US\$ in both periods. The Company recognized a gain of \$185,588 on the fair value remeasurement of the November Debentures and 2024 Debentures due to changes in the US\$/CDN\$ exchange rates and the Company’s share price. Other expenses related mostly to SFD<sup>®</sup> patent activity and a credit adjustment on the Company’s asset retirement obligations. More detail on each line item is provided below.



**Full year operating results.** Net loss for YE-24 compared to YE-23 increased by \$3,626,683 and by \$0.05 per share-basic. SFD<sup>®</sup> related-revenues decreased \$1,501,422, and SFD<sup>®</sup>-related costs, net, were \$227,358 lower due to the Turkish SFD<sup>®</sup> Survey earning most of its revenue in Q4-23 and from aircraft maintenance. Also, they were lower in Q4-24 due to the aircraft lease being converted to a finance lease and payments being applied to the lease liability, and not expensed. This was offset by required maintenance continued to be performed on the aircraft to get it prepared for the 2025 SFD<sup>®</sup> Surveys (defined herein) scheduled for 2025. G&A expenses increased by \$625,635 or approximately 18%, compared to YE-23, due to one additional headcount (CEO in YE-24), sales commissions and retainers, debenture issuance costs, and higher business development travel costs. Amortization expense increased \$127,540 due to the aircraft now being treated as a finance lease. Interest expense, net, increased by \$590,349 in YE-24 versus YE-23 due to the 2024 Debentures and 2024 Ataraxia Debentures being issued by the Company. Foreign exchange loss (gain) worsened \$582,134 as the CDN\$ weakened at December 31, 2024 versus December 31, 2023 and strengthened at December 31, 2023 versus December 31, 2022, as the Company had a net liability position in US\$ in both periods. The Company recognized a loss of \$296,534 on the fair value remeasurement of the November Debentures and the 2024 Debentures. Other expenses related mostly to loss on the write-off of leasehold improvements and lease modification. More detail on each line item is provided below.

**SFD<sup>®</sup>-Related Costs, Net**

SFD <sup>®</sup> -Related Costs (Figures are given in "\$")	Q4-24	Q4-23	Net change	% <sup>1.</sup>
Aircraft lease costs	-	91,560	(91,560)	(100)
Aircraft operations	453,003	206,395	246,608	119
Survey projects	245,879	982,972	(737,093)	(75)
Total SFD <sup>®</sup> -related costs, net	698,882	1,280,927	(582,045)	(45)

SFD <sup>®</sup> -Related Costs (Figures are given in "\$")	YE-24	YE-23	Net change	% <sup>1.</sup>
Aircraft lease costs	91,237	\$ 364,013	(272,776)	(75)
Aircraft operations	1,524,743	876,804	647,939	74
Survey projects	405,788	1,008,309	(602,521)	(60)
Total SFD <sup>®</sup> -related costs, net	2,021,768	2,249,126	(227,358)	(10)

- Percentages disclosed are approximate figures.

SFD<sup>®</sup>-related costs include aircraft charter costs (net of charter hire reimbursements), lease expenses, and aircraft operation and maintenance costs.

In Q4-24, aircraft lease costs were \$nil because as of March 22, 2024, the Company extended its aircraft lease for an additional three years and converted the lease to a finance lease. Please see the section "*Contractual Obligations – Leases*". The Company will own the aircraft at the end of the lease term. Aircraft operations were \$246,608 (119%) higher as required maintenance continued to be performed on the aircraft to ensure that all equipment was adequately prepared for upcoming the SFD<sup>®</sup> surveys. Survey projects were \$737,093 (approximately 75%) lower versus Q4-23 the Company incurred costs for the Turkish SFD<sup>®</sup> Survey in Q4-23.

During 2024, aircraft operations were \$647,939 (approximately 74%) higher as pilot training and required maintenance were performed before the mobilization of upcoming SFD<sup>®</sup> Surveys. Survey projects were \$602,521 lower due to costs incurred to perform the Turkish SFD<sup>®</sup> Survey in Q4-23. Aircraft lease costs were approximately 75% lower due to the conversion of the lease from an operation lease to a finance lease.

## G&A Expenses

G&A Expenses (Figures are given in "\$")	Q4-24	Q4-23	Net change	% <sup>1.</sup>
Salaries, benefits and consulting charges	381,876	343,684	38,192	11
Board and professional fees, public company costs	272,723	154,790	117,933	76
Premises and administrative overhead	190,267	202,897	(12,630)	(6)
Business development	116,477	11,582	104,895	906
Stock-based compensation	97,215	62,928	34,287	54
Total G&A Expenses	1,058,558	775,881	282,667	36

G&A Expenses (Figures are given in "\$")	YE-24	YE-23	Net change	% <sup>1.</sup>
Salaries, benefits and consulting charges	1,791,482	1,512,150	279,332	18
Board and professional fees, public company costs	899,797	753,468	146,329	19
Premises and administrative overhead	782,218	822,019	(39,801)	(5)
Business development	303,546	91,235	212,311	233
Stock-based compensation	268,735	241,271	27,464	11
Total G&A Expenses	4,045,778	3,420,143	625,635	18

- Percentages disclosed are approximate figures.

G&A expenses increased \$282,667, or approximately 36% in Q4-24 compared to Q4-23 for the following reasons:

- salaries, benefits, and consulting charges increased \$38,192 or approximately 11%, due to commissions and retainers for SFD<sup>®</sup>-related revenue;
- Board and professional fees and public company costs increased \$117,933 or approximately 76%, due to professional fees related to the convertible debentures;
- premises and administrative overhead costs decreased \$12,630 or approximately 6% due to the approximately 31% space reduction as of May 1, 2024. Please see the section "*Contractual Obligations – Leases*". This was offset by additional SFD<sup>®</sup> survey software expenditures as the Company prepares for its SFD<sup>®</sup> surveys;
- business development costs increased \$104,895 or approximately 906% due to increased travel related to finalizing upcoming SFD<sup>®</sup> survey contracts. In Q4-23 there was minimal travel as staff time was focused on planning for the Turkish SFD<sup>®</sup> Survey; and
- SBCE's were lower in Q4-24 versus Q4-23 by \$34,287 or approximately 54%, because the Company began to recognize expense related to the Company's Performance Options. Please see the next section "*Discussion of Operations – Stock-based Compensation Expenses*" for further information on the SBCE.

G&A expenses increased \$625,635 or approximately 18% in YE-24 compared to YE-23 for the following reasons:

- salaries, benefits, and consulting charges increased \$279,332 or approximately 18%, due to commissions and retainers paid for SFD<sup>®</sup>-related revenue and one additional headcount;
- Board and professional fees and public company costs increased \$146,329 or approximately 19%, due to professional fees related to the convertible debentures and less Board fees were taken as SBCE in YE-24;
- premises and administrative overhead costs decreased \$39,801 or approximately 5%, due to the approximately 30% space reduction as of May 1, 2024. Please see the section “*Contractual Obligations – Leases*”. This was offset by additional SFD<sup>®</sup> survey software expenditures as the Company prepares for its SFD<sup>®</sup> surveys;
- business development costs increased \$212,311 or approximately 233% due to increased travel related to finalizing SFD<sup>®</sup> survey contracts.; and
- SBCE’s were higher in YE-24 versus YE-23 by \$27,464 or approximately 11%, mostly due to the Company recognizing expenses related to the Performance Options and increased employee participation in the ESP Plan. Please see the next section “*Discussion of Operations– Stock-based Compensation Expenses*” for further information on the SBCE.

### **Stock-based Compensation Expenses**

Stock-based Compensation Expenses (Figures are given in “\$”)	Q4-24	Q4-23	Net change	% <sup>1.</sup>
Stock Option Expense	52,323	-	52,323	100
DSUs	15,000	-	15,000	100
RSUs	(1,069)	-	(1,069)	(100)
ESP Plan	10,692	7,106	3,586	50
Consultant Compensation	20,269	55,822	(35,553)	(64)
Total SBCE	97,215	62,928	34,287	54

Stock-based Compensation Expenses (Figures are given in “\$”)	YE-24	YE-23	Net change	% <sup>1.</sup>
Stock Option Expense	118,849	92,500	26,349	28
DSUs	15,000	-	15,000	100
RSUs	40,632	62,441	(21,809)	(35)
ESP Plan	41,619	30,508	11,111	36
Consultant Compensation	52,634	55,822	(3,188)	(6)
Total SBCE	268,734	241,271	27,463	11

1. Percentages disclosed are approximate figures.

SBCE varies in any given quarter or year as it is a function of several factors, including the number of units of each type of stock-based compensation issued in the period and the amortization term based on the number of years for full vesting of the units.

SBCE is also a function of periodic changes in the inputs used in the Black-Scholes option valuation model, such as volatility in NXT’s trailing common share price. For cash-settled stock-based compensation awards variability will occur based on changes to observable prices.

Stock options granted generally expire, if unexercised, five years from the date granted and entitlement to exercise them generally vests at a rate as determined by the Board. On January 6, 2023 the Company granted 2,050,000 incentive stock options at a strike price of \$0.216 to employees, officers and directors (the “2023 Options”). The 2023 Options will vest upon the occurrence of several milestones relating to the cash received for SFD<sup>®</sup> services performed: (i) one-third of the 2023 Options will vest upon the collection of US\$6.5 million for SFD<sup>®</sup> services performed; (ii) one-third of the 2023 Options will vest upon the collection of the next US\$7.0 million for SFD<sup>®</sup> services performed; and (iii) the final one-third of the 2023 Options will vest upon collection of an additional US\$7.5 million for SFD<sup>®</sup> services performed. In Q2-24 the Company determined that reaching the first vesting milestone of collecting US\$6.5 million for the 2023 Options is probable. In Q4-24 the Company also determined that reaching the second vesting milestone of collecting an additional US\$7.0 million was probable. Therefore, NXT began to recognize the stock option expense related to the 2023 Options first vesting level in Q2-24 and the second vesting level in Q4-24.

On February 24, 2025 the Company granted 1,400,000 incentive stock options at a strike price of \$0.203 to directors of the Company (the “2025 Options”). The 2025 Options will vest upon the achieving of a trailing twelve-month free cash flow per share of \$0.10.

The deferred share unit (“DSUs”) plan (the “DSU Plan”) is a long-term incentive plan that permits the grant of DSUs to qualified directors. DSUs granted under the DSU Plan are to be settled at the retirement, resignation, or death of the Board member holding the DSUs. DSUs were issued in Q4-24 in lieu of Board fees to two Board members. There were zero DSUs granted in YE-23.

Restricted Share Units (“RSUs”) entitle the holder to receive, at the option of the Company, either the underlying number of shares of the Company’s common shares upon vesting of such RSUs or a cash payment equal to the value of the underlying shares. The RSUs vest at a rate of one-third on the first, second and third anniversaries of the date of grant. The Company has historically settled the exercise of vested RSUs with common shares and cash. On February 21, 2024, the Company granted 1,035,000 RSUs to employees and officers which will vest over a three-year period. As at December 31, 2024, 915,000 RSUs were outstanding, after forfeitures. On February 24, 2025, the Company granted 1,875,000 RSUs to employees and officers which will vest over a three-year period.

The Employee Share Purchase Plan (the “ESP Plan”) allows employees and other individuals determined by the Board to be eligible to contribute a minimum of 1% and a maximum of 10% of their earnings to the plan for the purchase of common shares in the capital of the Company, of which the Company will make an equal contribution. Common shares contributed by the Company may be issued from treasury or acquired through the facilities of the Toronto Stock Exchange. In 2023 and 2024, the Company elected to issue common shares from the treasury.

On October 1, 2023 the Company entered into a service agreement with a marketing consultant to provide sales and market services to introduce potential customers to the SFD<sup>®</sup> technology, attend trade shows, and update the Company’s market systems. The consultant agreed to be compensated in common shares only for approximately US\$16,000 per month, based on the five-day volume average price at the end of each month until February 29, 2024. On December 31, 2024, a total of 634,439 common shares were due to the marketing consultant (360,139 common shares at December 31, 2023). On January 29, 2025, 634,439 common shares were issued to the marketing consultant.

SBCE in Q4-24 was higher compared to Q4-23 by \$34,287 or approximately 54% as the Company recognized the expense for the first two milestone of the 2023 Options. In addition, \$15,000 of director fees were reimbursed via DSUs during Q4-24, but not in Q4-23. Also, the ESP Plan expense increased as employee contributions increased in Q4-24. The RSU expense was a credit in Q4-24 as the Company’s stock price decreased from September 30, 2024 to December 31, 2024. The RSU grant from 2020 was fully vested as of August 2023 and therefore, there were no RSU expenses in Q4-23.

SBCE in YE-24 was higher compared to YE-23 by \$27,463 or approximately 11%. The Company began to recognize expense for the first two milestones of the 2023 Options in YE-24. Stock option expense in YE-23 was for director fees reimbursed via stock options. In addition, \$15,000 of director fees were reimbursed by DSUs during Q4-24, but there were zero DSUs issued in Q4-23. The ESP Plan expense increased as employee participation in the plan increased in YE-24 versus YE-23. The RSU expense decreased year over year as the 2024 RSU grant versus the 2023 RSU grant accrued a lower cost due to the lower share price and less units in the 2024 grant versus the previous 2020 RSU grant which had its final vesting period in YE-23.

#### ***Amortization***

Amortization (Figures are given in "\$")	Q4-24	Q4-23	Net change	% <sup>1.</sup>
Property and equipment	57,529	15,240	42,289	277
Intellectual property	424,629	424,629	-	-
Total Amortization	482,158	439,869	42,289	10

Amortization (Figures are given in "\$")	YE-24	YE-23	Net change	% <sup>1.</sup>
Property and equipment	188,499	60,959	127,540	209
Intellectual property	1,698,514	1,698,514	-	-
Total Amortization Expenses	1,887,013	1,759,473	127,540	7

1. Percentages disclosed are approximate figures.

Property and equipment  
and related depreciation expense

Property and equipment depreciation was higher in Q4-24 compared to Q4-23 and YE-24 versus YE-23. The Company converted its aircraft lease to a finance lease, and as a result, began to record the amortization of the aircraft as a depreciating expense over the estimated remaining useful life of the aircraft.

*IP and related amortization expense.* NXT acquired specific rights to utilize the proprietary SFD<sup>®</sup> technology in global hydrocarbon exploration applications from the inventor of the SFD<sup>®</sup> technology, the Former CEO, on August 31, 2015. The value attributed to the acquired IP assets was \$25.3 million. The IP assets are being amortized on a straight-line basis over a fifteen-year period (future amortization expense of \$1,685,000 per year).

The Company acquired the SFD<sup>®</sup> technology for the Geothermal Rights from the Former CEO on April 18, 2021. The Geothermal Right is being amortized on a straight-line basis over its estimated useful life of 20 years. The annual amortization expense expected to be recognized is approximately \$13,781 per year for a five-year aggregate total of \$68,902.

IP is subject to ongoing assessment of potential indicators of impairment of the recorded net book value. No impairments were recognized in YE-24 or YE-23.

### Other Expenses (Income)

Other Expenses (Figures are given in "\$")	Q4-24	Q4-23	Net change	% <sup>1.</sup>
Interest expense, net	224,629	77,901	146,728	188
Foreign exchange loss (gain)	566,911	(5,109)	572,020	>100
Intellectual property and other	(2,745)	1,948	(4,693)	(241)
Gain of fair value remeasurement	(185,589)	-	(185,589)	(100)
Total other expenses, net	603,206	74,740	528,466	707

Other Expenses (Figures are given in "\$")	YE-24	YE-23	Net change	% <sup>1.</sup>
Interest expense, net	750,611	160,262	590,349	368
Foreign exchange loss (gain)	574,106	(8,028)	582,134	>100
Intellectual property and other	10,824	15,852	(5,028)	(32)
Loss of fair value remeasurement	296,534	-	296,534	100
Loss on disposal of assets & lease modifications	135,455	-	135,455	100
Total other expenses, net	1,767,530	168,086	1,599,444	952

1. Percentages disclosed are approximate figures.

Interest expense, net

This category of other expenses includes interest expense from long-term debt and debentures netted by interest income earned on guaranteed investment certificates.

Interest expense increased in Q4-24 versus Q4-23, and YE 24 versus YE 23, due to the Company issuing the Debentures during 2023 and 2024.

Foreign exchange loss (gain). This category includes losses and gains caused by changes in the relative currency exchange values of US\$ and CDN\$. The Company held a net US\$ liability at both December 31, 2024 and December 31, 2023 which included accounts receivable, cash and cash equivalents, accrued liabilities, deferred revenue, convertible debentures, US\$ lease obligations, and the security deposit for the aircraft, all of which have an effect on the unrealized foreign exchange gain and loss. For Q4-24, the exchange loss was the result of (i) the 6.5% stronger US\$ to CDN\$ between September 30, 2024 and December 31, 2024 and (ii) the Company having a net liability of US\$7,130,144. For Q4-23, the exchange gain was the result of (i) the 1.9% stronger CDN\$ to US\$ between September 30, 2023 and December 31, 2023 and (ii) the Company having a significant net liability in US\$ of US\$1,179,649.

For YE-24 the exchange loss was the result of (i) the 8.7% weaker CDN\$ to US\$ between December 31, 2024 and December 31, 2023 and (ii) the Company having a net liability of US\$7,130,144. For YE-23, the exchange gain was the result of (i) the 2.4% stronger CDN\$ to US\$ rate between December 31, 2022 and December 31, 2023 and (ii) the Company having a net liability of US\$1,179,649.

The Company does not currently enter into hedging contracts, but instead uses alternative strategies to reduce the volatility of US dollar liabilities including holding excess US dollars before converting to CDN dollars.

IP and other. This category of other expenses primarily includes costs related to IP filings and research and development activity related to the SFD<sup>®</sup> technology.

In Q4-24, Q4-23, YE-24, and YE-23, the Company's IP and other expenses were associated with periodic patent maintenance and renewal fees required during these time periods.

Loss on fair value remeasurement. The Company recognized a loss of \$296,535 in the 2024 financial year on the fair value remeasurement of the November Debentures and 2024 Debentures (each as defined herein) due to changes in the US\$/CDN\$ exchange rates and the Company's share price.

Loss on disposal of assets & lease modifications. During Q2-24, the Company reduced its office space by approximately 31% and extended its office lease until September 2030. In Q1-24, the Company extended its aircraft lease for three years, until March 28, 2027. As a result of the office space reduction and the extensions of the aircraft and office leases, the Company recognized the following losses during YE-24:

Asset/Lease (Figures are given in "\$")	
Aircraft lease extension	31,686
Office lease extension	1,214
Write-off of leasehold improvements	101,006
Write-off of office furniture and equipment	1,549
Total	135,455

### **Income Tax Expense**

There was no income tax expense in YE-24 or YE-23.

### **Competition**

NXT's SFD<sup>®</sup> airborne survey service is based upon a proprietary technology, which is capable of remotely identifying, from a survey aircraft, subsurface anomalies associated with potential hydrocarbon traps with a resolution that it believes is technically superior to other airborne survey systems. To the Company's knowledge, there is no other company employing technology comparable to its SFD<sup>®</sup> survey system for oil and natural gas and geothermal exploration.

Seismic is the standard technology used by the oil and gas industry to image subsurface structures. It is our view that the SFD<sup>®</sup> survey system is highly complementary to seismic analysis. NXT's system may reduce the need for seismic in wide-area reconnaissance but will not replace the role of seismic in verifying structure, closure, and selecting drilling locations. The seismic industry is competitive with many international and regional service providers.

The SFD<sup>®</sup> system can be used as a focusing tool for seismic. With an SFD<sup>®</sup> survey, a large tract (that is, a tract over 5,000 square kilometers) of land can be evaluated quickly to identify locations with indications of reservoir potential. Seismic surveys, although effective in identifying these locations, are much more expensive, require significantly more time, and impose a much greater negative impact on local communities and the environment. Deploying an SFD<sup>®</sup> survey first can provide necessary information to target a seismic program over a limited area of locations selected by SFD<sup>®</sup>. This approach can result in a more effective seismic program and reduce the overall cost, time, community resistance, and environmental impact required to locate and qualify a prospect.

The energy industry uses other technologies for wide area oil and natural gas reconnaissance exploration, such as aeromagnetic and gravity surveys. These systems can provide regional geological information, such as basement depth, sedimentary thickness and major faulting, and structural development.

## Risk and Uncertainties

Hydrocarbon and geothermal exploration operations involve a number of risks and uncertainties that may affect the consolidated financial statements and are reasonably likely to affect them in the future. These risks and uncertainties are discussed in detail in NXT's AIF for the year ended December 31, 2024, "Section 5 Risk Factors", dated March 27, 2025, and available as an electronic copy on NXT's website at [www.nxtenergy.com](http://www.nxtenergy.com) and on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

**We caution that the factors referred to in the AIF and those referred to as part of particular forward-looking statements may not be exhaustive and that new risk factors emerge from time to time in the rapidly changing business environment.**

## Summary of Quarterly Results

A summary of operating results for each of the trailing eight quarters (including a comparison of certain key categories to each respective prior quarter) follows:

(Figures are given in "\$")	Q4-24	Q3-24	Q2-24	Q1-24
SFD <sup>®</sup> -related revenue	42,222	-	-	602,072
Net loss	(2,800,582)	(1,477,400)	(3,013,213)	(1,786,600)
Loss per share – basic	(0.04)	(0.02)	(0.04)	0.02)
Loss per share – diluted	(0.04)	(0.02)	(0.04)	(0.02)

(Figures are given in "\$")	Q4-23	Q3-23	Q2-23	Q1-23
SFD <sup>®</sup> -related revenue	2,145,716	-	-	-
Net loss	(425,701)	(1,703,956)	(1,706,809)	(1,614,647)
Loss per share – basic	(0.01)	(0.02)	(0.02)	(0.02)
Loss per share – diluted	(0.01)	(0.02)	(0.02)	(0.02)

During Q4-24, the Company's net loss increased due to unrealized foreign exchange losses due to the weakening CDN\$ and interest increases due to the issuance of the 2024 Ataraxia Debenture. In Q3-24, the Company incurred additional G&A costs in anticipation of increased commercial activity, recognized a gain for the fair value remeasurement of the convertible debentures, and unrealized foreign exchange loss (gain) improved due to a strengthening CDN\$. In Q2-24, the Company wrote off leasehold improvements due to the 31% office space reduction, recognized a loss for the fair value remeasurement of the convertible debentures, related increased interest expense, and unrealized foreign exchange loss increased due to the net US\$ liabilities held by the Company. In Q1-24, SFD<sup>®</sup> related-revenues were from the Turkish SFD<sup>®</sup> Survey. Net loss reflected higher SFD<sup>®</sup>-related costs, net due to the Turkish SFD<sup>®</sup> Survey an additional headcount, sales commissions and higher business development travel costs as well as interest expense due to the Debentures issued during 2023 and 2024 financial years. In Q4-23, the Company earned SFD<sup>®</sup>-related revenue and incurred SFD<sup>®</sup>-related costs due to the Turkish SFD<sup>®</sup> Survey, which reduced its net loss versus the previous six quarters. During Q3-23, the Company decreased G&A spending due to less professional fees as there was minimal incremental financing during the quarter. This was offset by costs incurred to plan for the upcoming Turkish SFD<sup>®</sup> Survey and foreign exchange losses due to the weakening CDN\$. In Q2-23, the Company incurred G&A costs due to increased business development activity and professional fees related to the Ataraxia Debentures. In Q1-23, the Company incurred lower SFD<sup>®</sup>-related costs as there was no unplanned maintenance on the aircraft, and lower G&A as the Company reduced its headcount by one. In each quarter between Q1-23 and Q4-24, the Company incurred net losses due to incurred SFD<sup>®</sup>-related costs related to aircraft lease and aircraft maintenance costs, G&A expenses, and non-cash items such as SBCE, which can be a significant expense in any given quarter. More details are provided below:



- In Q4-24, the Company incurred additional interest costs due to the addition of the 2024 Ataraxia Debentures and the 6.5% weakening of the CDN\$ during the quarter with the 2024 Ataraxia Debentures increasing the net US\$ liability. The Company also recognized a gain for the fair value remeasurement of the 2024 Debentures and the November Debentures
- in Q3-24, the Company incurred additional G&A costs in anticipation of increased commercial activity, recognized a gain for the fair value remeasurement of the convertible debentures, and unrealized foreign exchange loss (gain) improved due to a strengthening CDN\$;
- in Q2-24, the Company wrote off leasehold improvements due to the 31% office space reduction, interest expense increased and fair value remeasurement due to the addition of the 2024 Debentures, and with the strengthening US\$ versus the CDN\$ unrealized foreign exchange loss increased due to the net US\$ liabilities;
- in Q1-24, SFD<sup>®</sup>-related revenue and SFD<sup>®</sup>-related costs increased due to the Turkish SFD<sup>®</sup> Survey. G&A increased due to an additional headcount and business development costs. Interest expense increased due to the issuance of the November Debentures;
- in Q4-23, SFD<sup>®</sup>-related revenue and SFD<sup>®</sup>-related costs increased due to the Turkish SFD<sup>®</sup> Survey and therefore, reduced the Q4-23 loss versus the previous five quarters. Interest expenses increased due to the issuance of the November Debentures;
- in Q3-23, costs decreased as G&A spending due to less professional fees, offset by costs incurred to plan for the Turkish SFD<sup>®</sup> Survey and increased foreign exchange losses due to the weakening CDN\$;
- in Q2-23, costs increased primarily due to higher professional fees and business development activity; and
- in Q1-23, costs were reduced primarily due to lower headcount and maintenance costs.

### Liquidity and Capital Resources

#### *Going Concern*

The audited consolidated financial statements for YE-24 have been prepared on a going concern basis. The going concern basis of presentation assumes that NXT will continue in operation for the foreseeable future and will be able to realize its assets and discharge its liabilities and commitments in the normal course of business.

The events described in the following paragraphs highlight that there continues to be material uncertainties that cast substantial doubt about NXT's ability to continue as a going concern within one year after the date that the audited consolidated financial statements have been issued. The Company's current cash position is not expected to be sufficient to meet the Company's obligations and planned operations for a year beyond the date that the audited consolidated financial statements have been issued.

During 2024, the Company completed an SFD<sup>®</sup> survey and has received deposits payments on three other SFD<sup>®</sup> surveys planned to be executed in 2025 (the “2025 SFD<sup>®</sup> Surveys”). As of the date of this MD&A, the Company has finished the acquisition phase of one of the 2025 SFD<sup>®</sup> Surveys and received milestone payments which has generated cash from operations for the Company. In addition, during 2023 and 2024 the Company completed private placements which resulted in raising an additional net proceeds of \$9,757,366.

The Company continues to develop its pipeline of opportunities to secure additional revenue contracts. The Company’s longer-term success remains dependent upon its ability to convert these revenue opportunities into successful contracts, to continue to attract new client projects, expand its revenue base to a level sufficient to exceed fixed operating costs, and generate consistent positive cash flow from operations. The occurrence and timing of these events cannot be predicted with certainty.

Further financing options that may or may not be available to the Company include issuance of new equity, debentures or bank credit facilities. The need for any of these options will be dependent on the timing of securing additional SFD<sup>®</sup> related revenues and obtaining financing on terms that are acceptable to both the Company and the financier.

The consolidated financial statements do not reflect adjustments that would be necessary if the going concern basis was not appropriate. If the going concern basis was not appropriate for these consolidated financial statements, then adjustments would be necessary in the carrying value of the assets and liabilities, the reported revenues and expenses, and the balance sheet classifications used. These adjustments could be material.

NXT’s cash and cash equivalents and short-term deposits as at December 31, 2024 totaled \$0.73 million. Net working capital totaled \$(6.70) million. See the information in the section “*Liquidity and Capital Resources – Net Working Capital*” for further information.

Risks related to having sufficient ongoing net working capital to execute survey project contracts are mitigated through NXT’s normal practice of obtaining advance payments and progress payments from customers throughout the course of projects, which often span three to four months. In addition, where possible, risk of default on client billings are mitigated through the use of export insurance programs offered by Export Development Canada.

The Company does not have provisions in its leases, contracts, or other arrangements that would trigger additional funding requirements or early payments except if the Company were to default on its office lease, where the current month’s rent plus the next three months would become immediately due. If the Company were to default on the aircraft lease, the Company would be required to deliver the aircraft back to the lessor.

**Net Working Capital (Non-GAAP Measure)**

Net Working Capital (Figures are given in "\$")	December 31, 2024	December 31, 2023	Net Change	% <sup>1.</sup>
Current assets (current liabilities)				
Cash and cash equivalents	730,395	401,713	328,682	82
Accounts receivable	105,858	1,828,523	(1,722,665)	(94)
Prepaid expenses and deposits	274,799	53,673	221,126	412
Accounts payable and accrued liabilities	(1,233,974)	(1,836,741)	602,767	33
Unearned revenue	(840,768)	-	(840,768)	(100)
Current portion of convertible debentures	(4,915,248)	(1,842,566)	(3,072,682)	(167)
Current portion of long-term debt	(111,111)	(111,111)	-	-
Current portion of lease obligation	(693,607)	(343,513)	(350,094)	(102)
Total Net Working Capital	(6,683,656)	(1,850,022)	(4,833,634)	(261)

1. Percentages disclosed are approximate figures.

NXT had net working capital of \$(6,683,656) as at December 31, 2024.

Net working capital as at December 31, 2024 compared to December 31, 2023 decreased by \$4,833,634, or 261%. Funds were received from the 2024 Debentures, 2024 Ataraxia Debentures, accounts receivable payments on the Turkish SFD<sup>®</sup> Surveys and deposits on the other 2025 SFD<sup>®</sup> Surveys. These funds were used to settle accounts payable, accrued liabilities long-term debt, and lease obligations. Current lease obligations increased as the Company's building and aircraft leases were extended in 2024. In addition, most of the November Debentures are due within one year as of December 31, 2024. Please see "Advisories – Non-GAAP measures" for further information.

**Accounts Payable and Accrued Liabilities**

(Figures are given in "\$")	December 31, 2024	December 31, 2023	Net Change	% <sup>1.</sup>
Trade accounts payable	(342,189)	(386,194)	44,005	11
Deferred advisory board payable	(26,972)	(24,805)	(2,167)	(9)
Accrued liabilities	(82,971)	(633,850)	550,879	87
Accrued interest	(109,028)	(38,222)	(70,806)	(185)
Accrued directors' fees payable	(201,218)	(228,199)	26,981	12
Salaries payable	(312,119)	(444,857)	132,738	30
Vacation pay accrued	(88,042)	(78,246)	(9,796)	(13)
RSU and ESP Plan liability	(71,435)	(2,368)	(69,067)	>(100)
Total accounts payable	(1,233,974)	(1,836,741)	602,767	33

1. Percentages disclosed are approximate figures.

Accounts payable and accrued liabilities decreased by \$602,767 or approximately 33%, as at December 31, 2024 compared to December 31, 2023 for the following reasons:

- trade accounts payable decreased by \$44,005, or approximately 11%, as the Company improved its payment schedule timing to vendors;
- accrued liabilities decreased by \$550,879, or approximately 87%, as due to the payment of working capital requirements from the Turkish SFD<sup>®</sup> Survey and reducing deferred costs with cash received from the 2024 Debentures and operating cash receipts;
- accrued interest increased \$70,806, or approximately 185%, due to the issuance of the 2023 Ataraxia Debentures, the November Debentures and the 2024 Debentures;
- accrued directors' fees payable decreased by \$26,981, or approximately 12%, as some directors elected to receive their fees as DSUs;
- salaries payable decreased by \$132,738, or approximately 30%, as the Company paid a portion of the deferred salary that was outstanding as at December 31, 2023;
- vacation pay accrued increased by \$9,796, or approximately 13%, due to the timing of vacations; and
- RSU and ESP Plan liability increased \$69,067 or approximately >100% due to the issuance of RSUs to employees during the Q1-24. None were outstanding as at December 31, 2023.

### Cash Flow

Cash Flow-from/(used in) (Figures are given in "\$")	Q4-24	Q4-23	YE-24	YE-23
Operating activities	(1,388,806)	(1,468,589)	(3,969,591)	(4,831,950)
Financing activities	1,146,120	1,539,226	4,305,807	5,009,117
Investing activity	68,417	(32,322)	(27,029)	(32,322)
Effect of foreign exchange changes on cash	29,693	(6,010)	19,495	(6,569)
Net source (use) of cash	(144,576)	32,305	328,682	138,276
Cash and cash equivalents, start of period	874,971	369,408	401,713	263,437
Cash and cash equivalents, end of period	730,395	401,713	730,395	401,713
Short-term investments, end of period	-	-	-	-
Total cash and short-term investments, end of the period	730,395	401,713	730,395	401,713

The overall net changes in cash balances in each of the periods noted above is a function of several factors including any inflows (outflows) due to changes in net working capital balances, funds from and repayment of financings and property, and plant and equipment investments. Further information on the net changes in cash, by each of the operating, financing, and investing activities, is as follows:

Operating Activities (Figures are given in "\$")	Q4-24	Q4-23	YE-24	YE-23
Net loss for the period	(2,800,582)	(425,701)	(9,077,795)	(5,452,708)
Total non-cash expense and lease item	996,814	481,372	3,239,208	1,914,845
Operating activities before change in non-cash working capital balances	(1,803,768)	55,671	(5,838,587)	(3,537,863)
Change in non-cash working capital balances	414,962	(1,524,260)	1,868,996	(1,294,087)
Total cash used in operating activities	(1,388,806)	(1,468,589)	(3,969,591)	(4,831,950)

Operating cash flow increased by \$79,783 in Q4-24 as compared to Q4-23 due to deposits received on 2025 SFD<sup>®</sup> Surveys. In Q4-23, the Company accrued costs related to the Turkish SFD<sup>®</sup> Survey.

Operating cash flow increased by \$862,359 in YE-24 as compared to YE-23 due to payment of outstanding accounts receivable from the Turkish SFD<sup>®</sup> Survey, net of accounts payable and accrued liability payments related to the Turkish SFD<sup>®</sup> Survey and deposits received on the 2025 SFD<sup>®</sup> Surveys.

Financing Activities (Figures are given in "\$")	Q4-24	Q4-23	YE-24	YE-23
Repayment of long-term debt	(27,778)	(27,778)	(111,111)	(111,111)
Proceeds from stock compensation plans	10,693	6,963	41,620	40,616
Net proceeds from Private Placement	-	-	-	1,622,057
Proceeds from convertible debentures	1,227,291	1,560,041	4,677,754	3,457,555
Repayment of financial liability and lease obligations	(121,336)	-	(359,706)	-
Total cash from financing activities	1,088,870	1,539,226	4,248,557	5,009,117

Proceeds were received from employee contributions under the ESP Plan. Proceeds from convertible debentures were received in both YE-23 and YE-24. Please see the sections "*November Debentures*", "*2024 Debentures*" and "*Ataraxia Debentures*".

In Q1-23 net proceeds from the Private Placement (as defined herein) was \$1,622,057. Please see the section "*Private Placement*".

Beginning in Q2-24, the Company began payment on its revised aircraft lease, which as of Q2-24 is a finance lease. Please see the section "*Contractual Obligations Leases*".

Investing Activity (Figures are given in "\$")	Q4-24	Q4-23	YE-24	YE-23
Purchase of property, plant & equipment	-	(32,322)	(27,029)	(32,322)
Proceeds from short-term investments	68,417	-	-	-
Total Cash (provided by) used in investing activity	68,417	(32,322)	(27,029)	(32,322)

The Company upgraded certain SFD<sup>®</sup> equipment in YE-24 and YE-23 to enhance data acquisition of the SFD<sup>®</sup> Survey.

### ***Contractual Obligations***

#### **Leases**

*Office Lease.* On May 1, 2024, the Company surrendered approximately 3,207 square feet of its office lease to the landlord and as consideration, agreed to extended its lease for an additional five years until September 30, 2030. Please see the section "Other Expenses (Income) *Loss on disposal of assets & lease modifications*" for other costs associated with the surrendered space. Additional terms of the lease extension include an implied interest rate of 10% and monthly payments of \$19,771. The lease will continue to be treated as an operating lease.

*Aircraft Lease.* On March 22, 2024, the Company extended its aircraft lease for three years, until March 28, 2027. The Company will own the aircraft at the end of the lease term. Terms of the lease extension include an interest rate of 12% and monthly payments of US\$40,189. The Company has an early purchase option to acquire the aircraft only at any of the following date: March 28, 2025, September 28, 2025, March 28, 2026 or September 28, 2026. The purchase price would be the amortized value of the lease liability, plus a four-month interest penalty. The lease is being treated as a finance lease.

The estimated minimum annual commitments for the Company's lease components as at December 31, 2024 are listed in the following table:

Lease payments <sup>1</sup>	Office	Operating Costs	Aircraft <sup>2</sup>	Printer	Total
2025	237,252	163,401	693,743	3,424	1,097,820
2026	237,252	163,401	693,742	3,139	1,097,534
2027	237,252	163,401	116,615	-	517,268
2028	237,252	163,401	-	-	400,653
2029	237,252	163,401	-	-	400,653
2030	177,939	122,551	-	-	300,490
Total	1,364,199	939,556	1,504,100	6,563	3,814,418

1. Figures are given in "Canadian \$"
2. US\$ payments have been converted to CDN\$ at a rate of 1.4385.

### Debentures

Repayment of principal and interest as of December 31, 2024	US\$	CDN\$ <sup>1</sup>
2025	3,102,200	4,462,515
2026	3,830,050	5,509,527
Total principal and interest payments	6,932,250	9,972,042
Less interest	(760,250)	(1,093,619)
Principal remaining	6,172,000	8,878,423
Change in fair value of convertible debentures	206,141	296,534
Net principal remaining	6,378,141	9,174,957
Current portion of convertible debentures	3,416,926	4,915,248
Non-current portion of convertible debentures	2,961,215	4,259,709

1. US\$ payments have been converted to CDN\$ at a rate of 1.4385.

### 2024 Debentures

On May 31, 2024, the Company issued convertible debentures (the "2024 Debentures") to MCAPM LP for the principal amount of US\$2,000,000 (approximately CDN\$2,773,660). The 2024 Debentures bear interest at 10.0% per annum, paid quarterly in arrears, and are due and payable on May 31, 2026. The 2024 Debentures are convertible into common shares at a conversion price of US\$0.25 (approximately CDN\$0.3428) per common share, which provides MCAPM LP with the right to obtain up to 8,000,000 common shares of the Company.

The proceeds from the Debenture were used to support the working capital needs of SFD<sup>®</sup> surveys and other G&A costs, which include business development and marketing activities required to transform the existing pipeline of SFD<sup>®</sup> opportunities into firm contracts.

### November Debentures

On November 8, 2023, the Company issued the first tranche of a multi-tranche unsecured convertible debenture (the "November Debentures"). The November Debentures bear interest at 10.0% per annum, paid quarterly in arrears, and are due and payable two years after issuance of the November Debentures. The November Debentures are convertible into common shares in the capital of NXT at a fixed conversion price of US\$0.1808 (CDN\$0.25). During 2023, the Company issued the first two tranches of the November Debentures for US\$1,150,000 (approximately CDN\$1,577,600).

On January 12, 2024, the Company closed the final tranche of the November Debentures for an additional US\$722,000 (approximately CDN\$966,036). Including the final tranche, the Company issued a total of US\$1,872,000 (approximately CAD\$2,543,636) of the November Debentures, which will allow the subscribers to obtain an aggregate of up to 10,353,982 common shares. Insiders, which include MCAPM LP, Michael P. Mork (“Mork Capital”) and all of the directors of NXT, were issued November Debentures valued, in the aggregate principal amount, at US\$1,522,000 (approximately CDN\$2,076,776).

Mork Capital has the right to own, after conversion of all of its 2024 Debentures and November Debentures, 30,526,321 common shares. This represents approximately 32.5% of the issued and outstanding common shares of the Company as of the date of the financial statements (after giving effect to the conversion of the full amount of their 2024 Debentures and the November Debentures).

#### Ataraxia Debentures

In May 2023, the Company signed a subscription agreement with Ataraxia in which Ataraxia would purchase US\$2,300,000 of convertible debentures. The terms of the convertible debentures issued to Ataraxia include an annual interest rate of 10% paid quarterly in arrears. The convertible debentures can also be converted into voting preferred shares with an annual dividend rate of 10% paid per quarter. The preferred shares are not transferable, but may be converted on a one-to-one basis into common shares. The convertible debentures are payable on demand two years after the issue date and are secured by a general security agreement, subordinate to the long-term debt.

On May 31, 2023, the Company issued a two-year term convertible debenture for US\$1,200,000 (approximately CDN\$1,631,954) to Ataraxia and an additional US\$200,000 (approximately CDN\$265,560) on July 10, 2023 (the “2023 Ataraxia Debentures”). The 2023 Ataraxia Debentures have a fixed conversion price of US\$0.143 per common share.

On November 4, 2024, the Company issued a two-year term convertible debenture for US\$500,000 (approximately CDN\$676,995) to Ataraxia and an additional US\$400,000 (approximately CDN\$550,296) on November 12, 2024 (the “2024 Ataraxia Debentures”). The 2024 Ataraxia Debentures have a fixed conversion price of US\$0.24 per common share. The proceeds from the 2024 Ataraxia Debentures have been used to support the working capital needs of the SFD<sup>®</sup> surveys in Africa.

Ataraxia has the right to own, after conversion of all of their 2023 Ataraxia Debentures and 2024 Ataraxia Debentures, 13,540,209 common shares. This represents approximately 14.6% of the issued and outstanding common shares as of the date of these financial statements (after giving effect to the conversion of the full amount of the 2023 Ataraxia Debentures and 2024 Ataraxia Debentures).

As of the date of this MD&A, no preferred or common shares have been issued pursuant to the conversion of the 2023 Ataraxia Debentures or the 2024 Ataraxia Debentures.

On May 31, 2023, the Company and Ataraxia entered into an Investor Rights Agreement (the “Investor Rights Agreement”) pursuant to which Ataraxia has been granted the right: (i) to nominate one person for election or appointment as a director of the Company; (ii) to have one representative of Ataraxia attend the Company’s Board meetings as an observer (except any portion of a Board meeting where the Company’s relationship with Ataraxia is to be a subject of discussion); (iii) to purchase up to its pro rata portion (calculated on a fully diluted basis) of any securities offered by the Company, subject to certain limitations set forth in the Investor Rights Agreement; and (iv) receive certain information regarding the Company, including annual and quarterly financial statements, annual budgets, the capitalization tables, and access to its premises upon reasonable notification. In each case, Ataraxia will retain the rights set forth in the Investor Rights Agreement for so long as Ataraxia holds (i) any principal amount of the Ataraxia Debentures or (ii) common shares or preferred shares (as applicable), representing at least 5% of the outstanding common shares of the Company (on an as-converted basis, if Ataraxia holds Preferred Shares).

Both the Ataraxia subscription agreement, and the Investor Rights Agreement, are publicly available under the Company’s profile on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

### ***Private Placement***

On December 22, 2022, the Company announced a multi-tranche private placement (the “Private Placement”) at \$0.195 per share. On December 22, 2022, the Company issued 1,148,282 common shares for gross proceeds of \$223,915 in the first tranche, less issuance costs of \$7,732. On January 25, 2023, the Company closed the Private Placement by issuing an additional 8,510,000 common shares, at \$0.195 per common share, for additional aggregate gross proceeds of approximately \$1,659,450, less issuance costs of \$37,393. The proceeds from the Private Placement were used to support G&A, which include business development and marketing activities required to transform the pipeline of SFD<sup>®</sup> survey opportunities into firm contracts. Mork Capital purchased 8,750,000 common shares or \$1,706,250 of the Private Placement along with two members of the Board for a total of \$83,515.

### **Long-term Debt (HASCAP Loan)**

On May 26, 2021, the Company received \$1,000,000 from the BDC’s HASCAP Loan. The HASCAP Loan is a \$1,000,000 non-revolving ten-year term credit facility with an interest rate of 4%. Repayment terms were interest only until May 26, 2022, and monthly principal plus interest payments for the remaining nine years. The HASCAP Loan is secured by a general security agreement and is guaranteed by BDC.

Repayment of long-term debt principal and interest: (Figures are given in “\$”)	
2025	137,593
2026	133,148
2027	128,704
2028	124,259
2029	119,815
2030 to 2031	162,129
Total principal and interest payments	805,648
Less interest	(92,685)
Total principal remaining	712,963
Current portion of long-term debt	111,111
Non-current portion of long-term debt	601,852

### **Off-Balance Sheet Arrangements**

The Company has no off-balance sheet arrangements as of the date of this MD&A other than office premise non-lease operating costs as per NXT’s office lease agreement. If the Company were to default on its office lease, the current month’s rent including operation costs plus the next three months become immediately due. Operating cost amounts are disclosed in the section “*Liquidity and Capital Resources – Contractual Obligations.*”



NXT pays an estimated operating cost during the current year but has the obligation to pay the actual operating costs incurred as defined in the office lease in the first quarter of the following year if the estimate was low. Conversely, it will receive a refund if the estimate was too high. Currently, the Company believes that the operating cost estimate is reasonable and is consistent with discussions with the landlord under the Company's office lease.

### Transactions with Related Parties

Related party fees incurred were as follows:

(Figures are given in "\$")	Q4-24	Q4-23	YE-24	YE-23
Legal fees	36,747	13,472	164,373	129,600
Interest Expense <sup>1</sup>	184,039	48,172	441,986	107,792
Board of director fees	53,750	38,750	182,500	158,199
Management compensation	136,526	192,682	436,526	389,451

1. US\$137,356 for Q4-24 and US\$35,288 for Q4-23. US\$322,905 for YE-24 and US\$79,356 for YE-23. Includes interest expense for Ataraxia, Mork Capital and the Board.

One of the members of NXT's Board is a partner in a law firm which provides legal advice to NXT. Accounts payable and accrued liabilities include a total of \$55,455 (\$36,938 as at December 31, 2023) payable to this law firm.

Another member of NXT's Board is a board member of Pana Holdings Mauritius, the parent company of Ataraxia, which holds the 2023 Ataraxia Debentures and 2024 Ataraxia Debentures. Accounts payable and accrued liabilities include a total of \$40,011 (US\$27,814), (\$19,699 or US\$14,890, as at December 31, 2023) to Ataraxia for accrued interest.

A third member of NXT's Board is an employee of MCAPM LP, which holds convertible debentures. Accounts payable and accrued liabilities include a total of \$57,063 (US\$39,669) to Mork Capital for accrued interest.

All members of the Board elected to have most of their Board fees payable as at December 31, 2023 converted into the November Debentures, for a total of US\$147,000 (CDN\$196,686). Accounts payable and accrued liabilities include a total of \$4,680 (US\$3,253) (\$nil as at December 31, 2023) to Board members for accrued interest.

Accounts payable and accrued liabilities include \$201,218 (\$228,199 as at December 31, 2023) for Board fees and \$35,250 (\$98,708 as at December 31, 2023) for management compensation.

### Critical Accounting Estimates

In preparing the audited consolidated financial statements, NXT is required to make estimates and assumptions that affect both the amount and timing of recording assets, liabilities, revenues, and expenses since the determination of these items may be dependent on future events. The Company uses the most current information available and exercises careful judgment in making these estimates and assumptions. In the opinion of management, the 2024 audited consolidated financial statements have been properly prepared within reasonable limits of materiality and within the framework of the Company's significant accounting policies. The estimates and assumptions used are based upon management's best estimate as at the date of the December 31, 2024 audited consolidated financial statements. Estimates and assumptions are reviewed periodically and the effects of revisions are reflected in the period when determined. Actual results may differ from those estimates.

Certain estimates and judgments have a material impact where the assumptions underlying these accounting estimates relate to matters that are highly uncertain at the time the estimate or judgment is made or are subjective. In 2024 and 2023, the estimates and judgments included the assessment of impairment indicators of IP and recognition of SFD<sup>®</sup> related revenue.

The Company reviews IP for impairment whenever events or changes in circumstances indicate the carrying value may not be recoverable. The Company considers both internal and external factors when assessing for potential indicators of impairment of its IP, including the consideration of historical and forecasted SFD<sup>®</sup> related revenues, market capitalization, control premiums, and the SFD<sup>®</sup> related revenue multiples compared to industry peers. When indicators of impairment exist, the Company first compares the total of the estimated undiscounted future cash flows or the estimated sale price to the carrying value of an asset. If the carrying value exceeds these amounts, an impairment loss is recognized for the excess of the carrying value over the estimated fair value of the IP.

The Company recognizes SRD<sup>®</sup> related revenue in the consolidated financial statements based on the performance obligation for NXT in SFD<sup>®</sup> surveys, which are the acquisition, processing, interpretation and integration of SFD<sup>®</sup> data. Revenue from the sale of SFD<sup>®</sup> survey contracts is recognized over time by measuring the progress toward satisfaction of its performance obligation to the customer. The Company uses direct survey costs as the input measure to recognize revenue in any fiscal period. The percentage of direct survey costs incurred to date over the total expected survey costs to be incurred, provides an appropriate measure of the stage of the performance obligation being satisfied over time. The accounting for contracts that are not complete at the reporting date involves significant judgment, particularly as it relates to determining the total anticipated costs at completion.

### Changes in Accounting Policies

The audited consolidated financial statements of NXT for YE-24 have been prepared by management in accordance with US GAAP. The Company has consistently used US GAAP for the eight most recently completed quarters. The accounting policies applied are consistent with those outlined in NXT's annual audited consolidated financial statements for the year ended December 31, 2024, available on NXT's website at [www.nxtenergy.com](http://www.nxtenergy.com) and on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

## Financial Instruments and Other Instruments

The Company's non-derivative financial instruments consist of cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities, deferred revenue, long-term debt and convertible debentures. The carrying value of these financial instruments approximates their fair values due to their short terms to maturity. NXT is not exposed to significant interest rate fluctuations arising from these financial instruments, but is exposed to significant credit risk with accounts receivable. For accounts receivable, where possible, NXT requests advance payments and utilizes risk mitigation products offered by entities such as Export Development Canada including, for example, insurance coverage of contract accounts receivable, guarantee support for contract performance bonds and wrongful call insurance for such bonds.

NXT is exposed to foreign exchange risk as a result of holding foreign denominated financial instruments. Any unrealized foreign exchange gains and losses arising on such holdings are reflected in earnings at the end of each period. The Company does not currently enter into hedging contracts, but instead uses alternative strategies to reduce the volatility of US dollar liabilities including holding excess US dollars before converting to CDN dollars.

As at December 31, 2024 and December 31, 2023, the Company held no derivative financial instruments. For more information relating to risks, see the section titled "*Liquidity and Capital Resources – Net Working Capital*".

## Outstanding Share Capital

Figures provided are Common Shares	March 27, 2025	December 31, 2024	December 31, 2023
Common shares	79,455,385	78,495,184	78,025,237
Dilutive securities:			
2023 Ataraxia Debentures at US\$0.1430	9,790,209	9,790,209	9,790,209
November Debentures at US\$0.1808	10,353,982	10,353,982	6,360,619
2024 Debentures at US\$0.2500	8,000,000	8,000,000	-
2024 Ataraxia Debentures at US\$0.2400	3,750,000	3,750,000	-
Stock Options	4,017,820	2,647,820	2,927,820
DSUs	120,226	120,226	37,354
RSUs	2,484,998	915,000	-
Marketing consultant compensation	-	634,439	360,139
<b>Total share capital and dilutive securities</b>	<b>117,972,620</b>	<b>114,706,860</b>	<b>97,501,378</b>

The dilutive securities in the above table reflect the number of common shares that would be issued if the dilutive securities were fully converted or exercised by the holder of the dilutive security.

### Current Director & Officer Common Share Holdings

Figures provided are Common Shares	March 27, 2025	December 31, 2024	December 31, 2023
Peter Mork <sup>1,3</sup>	380,237	380,237	-
Charles Selby <sup>1</sup>	408,161	408,161	408,161
Gerry Sheehan <sup>1</sup>	77,000	77,000	77,000
Jeffrey Tilson <sup>1,4</sup>	6,118,234	5,254,961	-
John Tilson <sup>5</sup>	-	-	6,887,490
Bruce G. Wilcox <sup>1,2</sup>	793,667	767,000	500,005
Eugene Woychyshyn <sup>1,2,3</sup>	1,044,550	955,985	730,176
<b>Total director and officer share capital</b>	<b>8,821,849</b>	<b>7,843,344</b>	<b>8,602,832</b>

- 1 Director of NXT
- 2 Officer of NXT
- 3 Elected directors as of July 15, 2024
- 4 Appointed as director as of December 16, 2024
- 5 Resigned as director as of December 11, 2024

### Disclosure Controls and Procedures (“DCPs”) and Internal Controls over Financial Reporting (“ICFR”)

NXT’s CEO and Chief Financial Officer (the “CFO”) (together the “Responsible Officers”) are responsible for establishing and maintaining DCPs, or causing them to be designed under their supervision, for NXT to provide reasonable assurance that material information relating to the Company is made known to the Responsible Officers by others within the organization, particularly during the period in which the Company’s year-end consolidated financial statements and MD&A are being prepared.

DCPs and other procedures are designed to ensure that information required to be disclosed in reports that are filed is recorded, summarized, and reported within the time periods specified by the relevant securities regulatory authorities in either Canada or the United States of America. DCPs include controls and procedures designed to ensure that information required to be disclosed in our reports is communicated to management, including our Responsible Officers, to allow for timely decisions regarding required disclosure.

The Company has established and maintains ICFR using the criteria that were set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control – Integrated Framework (2013). The control framework was designed or caused to be designed under the supervision of the Responsible Officers to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with US GAAP.

In evaluating the effectiveness of the Company’s DCPs, as defined under the rules adopted by the Canadian securities regulatory authorities and by the United States Securities and Exchange Commission, the Company’s Responsible Officers concluded that there are material weaknesses in the Company’s ICFR that have a direct impact on the Company’s DCPs:

- due to the limited number of staff, it is not feasible to achieve adequate segregation of incompatible duties. NXT partially mitigates this deficiency by adding management and Audit Committee review procedures over the areas where inadequate segregation of duties is of the greatest concern; and
- NXT does not have a sufficient number of staff with specialized expertise to adequately conduct separate preparation and a subsequent independent review of certain complex or highly judgmental accounting issues. NXT partially mitigates this deficiency by preparing financial statements with their best judgments and estimates of complex accounting matters, and relies on reviews by management, external consultants, and the Audit Committee.

From time to time, to reduce these risks and to supplement a small corporate finance function, the Company engages various outside experts and advisors to assist with various accounting, controls, and tax issues in the normal course.

Given the small size of the Company's finance team, management has established a practice of increased engagement of external consultants, legal counsel, the Company's Disclosure Committee and Audit Committee in reviewing public disclosure.

The Responsible Officers concluded that, as at December 31, 2024, NXT's ICFR is not effective and as a result, its DCPs are not effective. NXT reached this conclusion based upon its assessment that there is a more than a remote likelihood that its ICFR will not prevent or detect material misstatements if they should exist in the Company's audited consolidated financial statements. The Responsible Officers continue to take certain actions to mitigate these material weaknesses including:

- the implementation of controls regarding review procedures surrounding its disclosure; and
- engagement of third-party experts used above.

In addition, the CFO engages subject matter consultants as the need arises.

There were no changes to the Company's ICFR in Q4-24.

It should be noted that a control system, including the Company's DCPs and ICFR, no matter how well conceived, can provide only reasonable, but not absolute, assurance that the objectives of the control system will be met, and it should not be expected that the DCPs and ICFR will prevent all errors or fraud.

#### **Additional Information**

Additional information related to the Company, including the Company's AIF is available on NXT's website at [www.nxtenergy.com](http://www.nxtenergy.com) and on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca).

**Consent of Independent Registered Public Accounting Firm**

The Board of Directors

NXT Energy Solutions Inc.

We consent to the use of our report dated March 31, 2023 on the consolidated financial statements of NXT Energy Solutions Inc. (the “Company”) which comprise the consolidated statements of loss and comprehensive loss, shareholders’ equity deficit and cash flows for the year ended December 31, 2022, and the related notes, included in the Annual Report on Form 20-F of the Company for the fiscal year ended December 31, 2024.

We also consent to the incorporation by reference of such report in the Registration Statement (No. 333-146890) on Form S-8 of the Company.

/s/ KPMG LLP

Chartered Professional Accountants

Calgary, Canada

April 29, 2025